

The Western



Gardener & Beekeeper

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awarded, the first one going to Mr. W. T. Macoun, Dominion Horticulturist.

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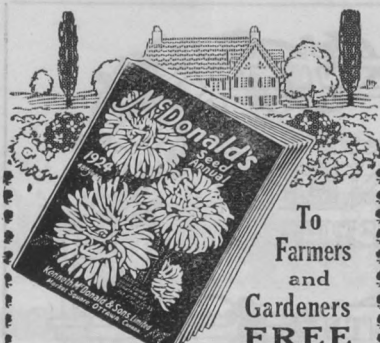
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The Western Gardener and Beekeeper

Official Organ of the Manitoba Horticultural and Forestry Association

Vol. 5

MAY, 1924

No. 7

LILACS

F. L. SKINNER, Dropmore, Manitoba Horticultural and Forestry Association

To most people the word Lilac will conjure up a picture of the common lilac with its fragrant flowers of various shades from white to deep lilac-purple. Now the common lilac is an extremely popular shrub and deservedly so, but if we confine ourselves to a selection of varieties of the common lilac we are only going to enjoy a lilac season of from two to three weeks, whereas by a judicious selection of species combined with varieties of the common form, we may have lilac flowers continuously from the end of May until the end of July.

Fifty years ago, according to Professor Sargent, only six lilac species were known in America, and the Kew Hand list of 1902 names only ten species. Now, according to the Bulletin of Popular Information, published by the Arnold Arboretum, there are 27 species in America, 22 of them having been introduced by the Arboretum. With the exception of the common lilac and Josikae's lilac from Europe and *Syringa emodi* from the Himalayas, all the others are native to Eastern Asia, even *Syringa peosica* having been recently discovered growing wild in Western China.

I have been able to secure quite a number of these species, and possibly a few notes regarding their behaviour in Manitoba may be of interest to you. The first lilac to open its flowers last year was *Syringa dilatata*, a species from Northern Korea, which to the ordinary observer looks very much like the common lilac. Its flowers are pale blueish lilac in bud and fade until almost white when fully open; the panicles are fairly large and rather lax, and the individual flowers are about the same size as those of the variety of *Syringa vulgaris*, known as Charles X. An attractive feature of this lilac is the deep purple color which the leaves assume in autumn.

About five or six days after *Syringa dilatata* had commenced flowering the

earlier varieties of *Syringa vulgaris* commenced to open their flowers. The newer forms of the common lilac are a great advance on the old common lilac, but it would be rather useless for me to give a list of the best varieties, as that is to a great extent merely a matter of personal opinion and scarcely any two persons would agree on a list of the best dozen varieties. Some of the large flowered single varieties, with deep reddish-purple colored flowers are, however, very fine and the single white variety known as Marie Legray, is also a favorite of mine. Amongst double flowered varieties Miss Ellen Willmott is an exceptionally large flowered and beautiful white form. Another good double variety is Edourd Andre; it has wine-colored buds and is rose pink when fully open; it is the nearest to a pink lilac that I have seen, and the contrast between the buds and the open flowers is very striking. Many people have asked me why their lilacs fail to bloom and I usually find on enquiring that fast growing trees such as the Manitoba maple have been planted near the lilacs and have eventually grown up and overshadowed them; under these conditions a lilac will never bloom freely as the lilac, like the rose, likes an open, sunny position. It also must have shelter from the winds and storms of winter, as I have known the common lilac to kill out completely when planted in a very exposed position. I have also found that the white forms are not quite as hardy as the colored varieties. In buying named varieties of the common lilac, it is a good plan to secure them either on their own roots or grafted on *Syringa villosa*; if grafted on the common form it is impossible to tell the grafted plant from the suckers, which are almost sure to grow from the stock: the privet as a stock is, of course, too tender for Western Canada. The lilac can be grafted on our native ash, but when grown on that stock I find they are

more liable to winter injury than when on their own roots. Mr. Macoun tells me that they use *Syringa villosa* exclusively as a stock for varieties of the common lilac at the Central Experimental Farm, and find it very satisfactory, as it does not sucker, and if a shoot does come from below the graft it is very easily known by the different forms of the leaves. It is also very easily raised, either from seeds or cuttings. For those who do not care to go to the expense of securing a collection of named forms of the common lilac, a very good way is to secure seeds from a good collection, such as is grown at any of the Experimental Farms, the resulting seedlings will all be beautiful and some of them will be quite as good as their parents.

By the time the common lilacs are beginning to fade *Syringa pubescens*, a species from North China, will be opening its first flowers. These are rather small and somewhat after the shape of those of *Syringa villosa*; they are pale mauve in color with violet colored anthers and have a most delightful fragrance. The leaves are somewhat egg-shaped and pointed, smaller than the common lilac and rather leathery in texture. Though this lilac was introduced to America in 1883 it is still very uncommon, as it has been found difficult to propagate except by grafting. According to Professor Sargent it has not been known to produce seed in the United States so far. This is probably due to the absence of the insects which pollinate it in China, as I managed to secure a panicle of seed by hand pollinating the flowers. Unfortunately I had not harvested these seeds when the unexpectedly severe frost of last September arrived, and it is hard to say whether they will germinate. Closely allied to *Syringa pubescens*, and flowering at the same time, is

(Continued on Page 228)

Relation of Fertilizers to Vegetable Crops

C. B. CLEVENGER, Manitoba Agricultural College, Manitoba Horticultural and Forestry Association

In no line of farming is a knowledge of the principles of plant nutrition more serviceable than in market gardening. The market gardener wants first of all, crops of quality. These are grown under conditions which permit of a continuous and rapid development, for delay in growth is largely responsible for off tastes and toughness in green vegetables. In market gardening the cropping is in the highest degree intensive, and even the best soils are liable to be deficient in some essential feature. For successful gardening then judicious fertilizing must be practised which comes only with a knowledge of the plant and soil with that of the climatic conditions present.

If a common field, vegetable or flower plant is analyzed, it is found to be made up of a number of simple substances or elements. Of these elements ten have been found to be necessary for the growth and development of plants and are given in Table I.

Note.—By an element is meant a substance which does not contain more than one kind of substance. Water, for example, is not an element, for it can be decomposed into two simple substances, oxygen and hydrogen.

TABLE I.

Essential Elements for Plant Growth:

Carbon, Oxygen, Hydrogen—Constitute about 98 per cent. of plant obtained from air and water.

Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur, Iron—Constitute about 2 per cent. of plant obtained from soil.

Each of these elements has a distinct use in the development of the plant. Therefore, if even one is lacking or present in too small an amount no matter how much of the other elements are present, growth does not occur or is impaired.

Functions of Essential Elements

The elements carbon, oxygen and hydrogen make up the sugars and starches and the main part of the proteins or living part of the plant. These three elements make up about 98 per cent. of the mature green weight of the plant. The source of carbon is the carbon dioxide of the air taken into the plant through the leaves. The hydrogen comes from water and the oxygen from both water and air.

Nitrogen is necessary for the formation of all proteins. It is the nitrogen which stimulates leaf and stalk growth and gives to plants their green color. A lack of nitrogen manifests itself by the lack of green color, and little vegetative growth, while an excess will produce succulence and delay maturity.

Phosphorus and sulphur in addition to nitrogen are necessary for the formation of some proteins. The proteins containing phosphorus and sulphur are closely related to cell reproduction and life. Seeds which contain the plant embryo, therefore, are the richest in phosphorus and hence phosphorus is necessary for seed formation. A supply of phosphorus will stimulate early root development and hasten plant maturity in many cases. Sulphur forms a part of some of the flavoring

oils as in mustard, onions, cabbage and horse radish. Potassium is closely connected with starch and sugar formation, and its movement from one part of the plant to another. For example, potatoes and sugar beets require relatively larger amounts of potassium than tomatoes or cabbages. In all crops the leaves are the work shops where plant substances are built up. It is, therefore, necessary that as materials are made they must be conducted to another portion of the plant, as the seed to be stored.

Calcium takes some part in the production of new tissue. Magnesium assists in the formation of chlorophyll, and of proteins, and is necessary for seed formation. Iron is necessary for formation of the green coloring matter or chlorophyll of the leaves.

Forms in Which Plant Food Materials Are Taken Inside

Plant food materials to be of use to the plant must be a form which dissolves easily in water, for it is by means of water that substances are able to pass from the soil into the roots. Plant food materials easily dissolved in water are spoken of as "readily available" or "soluble plant foods."

The importance of water is thus easily understood, for it not only furnishes hydrogen and oxygen, but is the vehicle by which the elements obtained from the soil are carried inside the plant. For every pound of dry matter formed required the passage of from 300 to 500 pounds of water through the plant.

will differ in their deficiencies, and there is no hard and fast rule as to their requirements.

Fertilizers are applied to soils either to supply a deficiency in the soil or to force or speed up the growth of plants in their early stages. The latter practice is often times desirable when the gardener wishes to get his produce on the market as early as possible. Here the soluble fertilizers applied furnish to the young plants plenty of available nitrogen, phosphorus and potassium, which enable them to become established in the soil more quickly.

The plant feeds from the soil most when it is actively growing, taking less from the soil as it approaches maturity. It is necessary, therefore, not only to keep in the soil the plant food materials, but to have them there in available form and in the right proportions at the time the plant requires them.

Materials Used as Fertilizers

In table II. is given some of the materials used as fertilizers, and the approximate amounts in pounds per ton of nitrogen, phosphorus and potassium they contain. In the trade these elements are spoken of as ammonia, phosphoric acid and potash respectively. In the table figures are also given for these elements expressed in these terms. Ammonia is nitrogen combined with hydrogen, and phosphoric acid and potash are the phosphorus and the potassium combined with oxygen.

A fertilizer may consist of a single chemical compound as nitrate of soda,

TABLE II.—FERTILITY IN MANURE AND FERTILIZERS

Name of Material—	Pounds			Per Ton		
	Nitrogen	Phosphorus	Potassium	Ammonia (NH ₃)	Phosphoric Acid (P ₂ O ₅)	Potash (K ₂ O)
Fresh Farm Manure	10	2	8	12	5	10
Barn Yard Manure	10	3	8	12	7	10
Clover Hay	40	5	30	56	12	36
Wheat Straw	10	2	14	12	5	17
Sodium Nitrate	310			372		
Dried Blood	280			336		
Ammonium Sulphate	400			480		
Cyanamid	500			600		
Raw Bone Meal	80	180		96	415	
Steamed Bone Meal	20	250		24	575	
Acid Phosphate		125			290	
Double Superphosphate or treble phosphate		400			920	
Basic Slag Phosphate		160			370	
Kainit			200			240
Muriate of Potash			850			1020
Sulphate of Potash			850			1020

Or all the elements nitrogen, phosphorus and potassium give us most concern, for experience shows that they are the most difficult to maintain in the soil in the available form. These elements are the ones usually applied either singly or in combination in the application of fertilizers to soils. The supply of carbon comes from the air and is unlimited. Water is limited by rainfall and water holding capacity of the soil. The remaining elements are usually present in most soils in sufficient amounts to satisfy the needs and demands of the crops. However, soils

muriate of potash or it may consist of a mixture of compounds as bone meal, tankage and manure. When the fertilizer supplies the three elements nitrogen, phosphorus and potassium it is called a "complete fertilizer."

Manure

The oldest fertilizer which has been used to furnish raw materials to the plant is animal manures. Since manure was not considered a commercial product when the term "fertilizer" came into use, it is not classed with "commercial fertilizers," although

at the present time it has a market value in the older vegetable gardening districts. Manure is the main fertilizing material used in vegetable growing, although in older districts, due to its scarcity and great demand it must be supplemented by commercial fertilizers. Manure not only supplies nitrogen, phosphorus and potassium; but supplies organic matter from which humus is made, and adds to the soil organisms or bacteria which bring about liberation of plant food materials by decomposition of organic matter. It should be noted here that manure is low in amount of phosphorus it contains as compared to nitrogen and potassium. It is, therefore, weak in plant ripener, but strong in stalk and leaf grower.

In applying manure to vegetable crops, it should be sufficiently rotted or decomposed so as to be easily incorporated within the soil. In this state it opens heavy soils and fills up the spaces in light soils, hence increases the moisture holding capacity of both. This value of manure is very great, especially so since moisture is so often the limiting factor in plant growth. This property of organic matter to hold water is shown by the following figures—100 lbs. of sand can hold but 25 lbs. of water, 100 lbs. of clay can hold but 50 lbs. of water; 100 lbs. of organic matter can hold 190 lbs. of water.

Rotted manure has distinct advantages over fresh manure, especially so if the latter contains weed seeds and germs of plant diseases or coarse materials which might interfere with soil preparation and cultivation. In rotting weed seeds and germs may be destroyed.

In the process of rotting manure in the usual careless method of storing farm manure out of doors $\frac{1}{2}$ or 50 per cent. of the nutrients are lost through leaching by rain and fermentation. This is shown by a comparison of the analysis of fresh and barnyard manures in table II. In order that such losses do not occur considerable care must be taken in storing and rotting manure. About 50 per cent., or half, of the fertilizing value of the excrement from farm animals is in the urine. Also the elements are in a more readily available form in the urine than in the solid excrement.

Manure supplies organisms which break down not only the organic matter of the manure, but also that of the organic matter in the soil. On new soil cases have been noted where the beneficial effect of manure has been greater than that coming from the chemical elements in the manure. It is a common practice to inoculate a new peat soil with manure. The nitrogen in organic matter is in a "locked up" condition, and must be changed to the nitrate form, the form in which most plants can use nitrogen. This change is brought about by specific bacteria, and the process is called "nitrification."

Just a word should be said here concerning the use of the term "humus." The further organic matter decays, the slower is the rate of decay or decomposition. Finally it reaches a state at which further decomposition is very slow and little if any of the fertility elements are changed over to the available form. When organic matter reaches this resistant stage of decay it is properly called "humus." It is,

therefore, not correct to apply the term "humus" to organic matter which can undergo active decomposition. The term "humus" has caused in the past so much misunderstanding, both on the part of station workers and practical men the world over, that it is better to use the term "active organic matter" when the organic matter is capable of furnishing fertility elements to the growing plant is meant.

Green manures are sometimes used to put into the soil fresh organic matter. These are crops, such as some of the clovers, vetch, field peas and rye allowed to grow either before the main or money crop has been seeded or after it has been harvested. Of course the extent to which this practice can be followed depends upon the length of growing season, for green materials should not be plowed under unless there is enough moisture and a sufficiently high temperature for rapid decomposition of them.

Nitrate of Soda

Since it is the element nitrogen that promotes the vegetative growth and it is the succulent plant that is often wanted in vegetable gardening, nitrate of soda can often be used with profit, especially so if the soil is slow in warming up, due to backwardness of the season. This fertilizer supplies readily available nitrogen, and hence the crop can get started before the soil is warm enough for active nitrification. The bacteria in the soil require a certain temperature before they are extremely active, hence nitrogen from organic manure is not immediately useable by the plant. In table III. is given a comparison of yields of field crops by equal quantities of nitrogen in different nitrogen carriers. These figures are the result of experiments carried on at Ohio Experiment Station.

TABLE III.

Comparative Effectiveness of Various Carriers of Nitrogen, Soil Limed and Treated With Carriers of Phosphorus and Potassium. Increase from Nitrogen Carriers Calculated on Basis of Nitrate of Soda at 100.

	Corn	Oats	Wheat	Clover	Timothy
Nitrate of Soda	100	100	100	100	100
Sulphate of Ammonia	70	53	80	69	55
Oil Meal	69	61	43	27	31
Dried Blood	61	44	49	41	19

Nitrate of soda gave the greatest yield in each crop, sulphate of ammonia comes second with one exception, with organic carriers of nitrogen as oil meal and blood next. Taking into consideration other work that has been done, the relative effectiveness of nitrate of soda, sulphate of ammonia and dried blood is expressed by the ratio 100; 90; 80, respectively. Because nitrate of soda is readily soluble and hence immediately available, it can be applied to plants at the time when needed most.

Phosphorus

Phosphorus is applied in most cases in vegetable gardening as acid phosphate or bone meal, either raw or steamed. The phosphorus in acid phosphate is immediately available. Bone meal is not immediately soluble. In steam bone meal the raw bones have been treated with steam, which removes the fat and flesh adhering to them. The phosphorus in steam bone meal becomes soluble faster than the phosphorus in raw bone meal.

Potassium

Potassium is applied usually either as muriate or sulphate of potash. Potash salts are all readily soluble. Wood ashes and kainit can also be used. Wood ashes contain lime and hence could be used to advantage on a sour soil. The potash in ashes is also in form of a strong base and hence ashes have high power for neutralizing acidity or sourness. Potato scab often results from use of ashes, due to the soil becoming too sweet.

Basis on Which Different Brands Are Made

In manufacturing fertilizers different brands are made up with special points in view. The basic thought or idea on which a brand is built is to furnish the necessary elements in the right proportions to meet the special needs of the crop grown. A standard brand of fertilizer with about the proportion of the formula 4-8-4 may be taken to give results on garden vegetables generally on various soils. This formula means that in one ton of the fertilizer there is four percent or 80 pounds of soluble ammonia, 8 per cent. or 160 pounds soluble phosphoric acid and 4 per cent. or 80 pounds of soluble potash. The guaranteed analysis of a fertilizer, stating the total and soluble or available amounts, is required by law to be placed on the bag. The purchaser then knows what he is purchasing and its approximate market value, if he understands the meaning of the terms employed. The selection of a fertilizer or brand to be used depends upon the soil, the climate and crop to be grown. Because of differences in climate, brands giving most profitable results in one province or region may not give the most profitable results in another, even though the soils are similar.

The method and time of application of fertilizer is important. "In a well developed agricultural region, established practice quite often proves to be the correct practice." In the Eastern States in general farming fertilizer is applied in the raw, in the Central West broadcasting is preferable. Fertilizer must not come in contact with the seed as in planting potatoes, for sprouting would be prevented. It has been found that acid phosphate is less injurious than soluble potash or ammonium salts. Profitable fertilizer practices in various districts result from long experience or from well planned fertility and culture tests.

The quantity of fertilizer which can be applied advantageously to a given crop is governed by the cost of the fertilizer, and selling price of the crop. The following table showing results of work at New York State Experiment Station illustrates this point:

(Continued on Page 225)

THE WESTERN GARDENER and BEEKEEPER

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D. R. Chapman, B.A. - - - - - Editor

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Vol. 5.

WINNIPEG, MAY, 1924.

No. 7.

POULTRY PRODUCTS

Eggs are the chief source of income in the poultry business generally. The value of the eggs laid in the average backyard poultry plant, or on the average farm, is much greater than the value of the birds used as meat in the course of a year. Only on farms where turkeys, geese, or heavy meat breeds of chickens are raised, and egg production relatively neglected, is the revenue from poultry meat greater than the revenue from eggs. At the agricultural exposition staged by the T. Eaton Co., Ltd., in February due emphasis was placed on egg production. The display shown on the cover of this issue includes, on one side, a collection of dressed turkeys, and on the other side, a graphic explanation of the government grades of eggs, called (1) specials, (2) extras, (3) firsts, (4) seconds. These grades are determined by candling, the best grade having a very small air space on top, and a clear or translucent appearance before the light, as compared with eggs that are not so fresh.

The importance of having well bred birds, in order to make money with eggs, was illustrated by two pens side by side in the same exposition. The 10 thoroughbred hens laid 2,230 eggs in one year, while the 10 mongrel hens laid only 517 eggs. When the price of eggs is low there is no profit in keeping mongrels that do not lay many eggs, but take just about as much feed as if they did.

The poultry breeders of Western Canada who have been winning at the shows during the winter have the kind of stock that produce eggs economically and make poultry raising both profitable and pleasant. Anyone who has been keeping a miscellaneous flock that cannot pay its board bill should cut out all the loafers, and rebuild the flock with good stock. Getting some baby chicks of the best strains is one good way of making a new start, at this time of year.

GLADIOLUS EXHIBITION

According to their published prize list and programme, the Canadian Gladiolus Society is going to have a gorgeous exhibition at the Ontario

Agricultural College at Guelph, 20th and 21st August, 1924. There are four classes with a total of 145 sections. With a number of entries in each one of these, a remarkable collection of flowers will be on view to delight the eye of anyone who is fortunate enough to be there. Class A. is open to all comers, and it is expected that gardeners of Western Canada and of the United States will be well represented in this class. Some Westerners may show also in class B., which is for amateurs only, or those who grow for pleasure and employ no labor in care or handling and who do not sell bulbs. Class C. is open only to residents of the locality. Any members of the Canadian Gladiolus Society who have never won a prize at an exhibition of this society are eligible for the novice class, D. The secretary-treasurer is Prof. A. H. Tomlinson, O.A.C., Guelph, Ont.

HOW A GARDEN PAYS

A vegetable garden is often the most profitable part of a farm, and no mean help to the city householder's finances. While the vegetables which are grown would not, in many cases, bring prices that would do more than cover the cost of production, if put on the market in a wholesale way; they may be credited with the best retail values when they are consumed at home. Vegetables right at one's door where they can be picked just when they are wanted for the table, are better than any that are bought at the grocery store in a less fresh condition. If the vegetables from the family garden that are eaten during the year are credited even at a little less than the best retail prices, it will be found that a lot of money has been saved.

Some figures on how much profit there is in an ordinary garden are supplied from an experiment conducted at the Missouri Agricultural Experimental Station on a garden of one quarter of an acre, kept for three years. The experiment showed that the average costs per year were \$46.55, that gross returns averaged \$180.69, and net returns \$134.14 per year. This garden paid \$1.79 an hour for the labor expended upon it. The labor income would not be so good if economical methods were not used, but there is no reason why amateur gardeners should not plan their work so that a greater proportion of the work can be done by horse power. Spading should not be practised in any but the smallest gardens, for ploughing is cheaper. Any operations that can be done by horse power should not be done by hand, except when one is gardening for exercise and not for profit.

NEW LOCALS FORMED

The organization of new local horticultural societies is a sign of increased interest in a hobby which creates a vast amount of pleasure, profit and health for those who engage in it. At Hamiota and at Gladstone the horticulturists have recently formed local societies which will add strength to the Manitoba Horticultural and Forestry Association, with which they are affiliated, and will, no doubt, be of great value to their respective communities.

ANSWERS TO QUESTIONS

The Editor kindly invites all readers of the WESTERN GARDENER AND BEEKEEPER to write for advice in their gardening difficulties; this will be given most willingly through these pages. All questions received not later than the 15th of the month will be answered in the following issue.

Address all enquiries to The Editor, THE WESTERN GARDENER AND BEEKEEPER, 171 McDermot Ave., Winnipeg.

E. A. A. P., Waseca, Sask., Q.—Will Jack and Scotch pine make a hedge? A few years ago I planted a double row of Spruce and Pine mixed, three feet apart both ways, intending them for a hedge, but have been told that the Pines will not make a satisfactory hedge. Last summer I nipped off the leads of quite a lot of both Pines and Spruce as they were getting as high as I wish them to grow.

A.—We feel sure you would not be able to make into a successful hedge your planting of Pine and Spruce. Regarding clipped hedges, I presume you intend to make yours a clipped type, though you do not state. You will need a variety of shrub that sends out numerous lateral growths annually. Where the leader on a pine or spruce is clipped it only sends a few leaders in the place of the one and no side branches lower down, with the result that the lower part of your hedge would become devoid of fresh green growth entirely, present a straggly appearance and defeat the aim you have in view in making a hedge.

Mrs. T. L., Stonewall, Man., Q. No. 1.—What is the most efficient way for a farmer to take up parsnips? (When we raised a quantity of very large ones, the plough injured them).

A.—Most parsnip growers use the plow to assist in digging out their crop. They do not remove the parsnips themselves with the plow but plow away from one side of the row, either very deep the first time or twice in the same furrow. Then, using a spade (a narrow tile ditching spade works well) they are pried out into the open furrow and pulled from low down on the root. The plow must be handled carefully as a percentage with the best of care will become damaged.

Q. No. 2.—Is there a market for mature or green garden peas in Winnipeg that would suit a man engaged in mixed farming?

A.—We doubt if there is a large market for mature peas, although quite a quantity of mature peas are sold. With green peas there is usually a very good market, especially for the early large pod varieties. Last summer in the latter part of the green pea season the market did drop rather low, so we would emphasize the early crop for profitable growing.

Q. No. 3.—Is there a market for dried beans other than white? (I have the plump-white and red-spotted bean).

A.—We do not think you will find a market for dry beans other than the pure white varieties.

Q. No. 4.—A three-year-old apple tree sent out branches near the ground. When should these be removed and to what height should it be kept free of branches.

A.—For apple growing in the West, the trees should be headed low, so that the trunk is practically done away with entirely. Heading low causes the tree to branch out close to the ground making a bush type of tree. Therefore, in answer to your question, branches close to the ground should be left to form the tree, providing they are not below the point of budding at the time of propagation in the nursery.

Mrs. J. G., Youngstown, Alta., Q.—Could you answer through the columns of your paper, the method of pruning small fruit trees?

A.—Space only allows us to give you the basic principles of small fruit pruning. With Red and White Currants the chief part of the crop is borne on two and three-year-old wood, near the base of the year's growth. A small amount may be borne on older wood, therefore, your system of pruning is one of gradual renewal. Between five and eight main stems should be allowed to develop per bush. With Black Currants the larger percentage of fruit is grown on one-year-old wood, therefore your pruning system should be such as to develop a large amount of new growth annually. Gooseberries can be pruned much the same as you would prune Red Currants. Raspberries send up a new cane growth annually. Each spring (for Western conditions) the old canes that are dead, are pruned out. Should the remaining canes still crowd each other, part of these can be removed, always cutting out the oldest canes, leaving the younger thrifty growth for future fruit cropping.

(Continued on Page 228)

RELATION OF FERTILIZERS TO VEGETABLE CROPS

(Continued from Page 223)

TABLE IV.

Selling Price of Crop as Related to Quantity of Fertilizer. From Data on Increase in Yield of Potatoes With 4-8-10 Analysis.

Pounds Per Acre	Cost Per Acre	Increase, Bushels Per Acre	Value of Increase above Fertilizer Cost.	
			At \$0.50	At \$1.50
500	\$6.25	23.3	\$5.40	\$28.70
1000	12.50	44.2	9.60	53.80
1500	18.75	55.4	8.95	64.35
2000	25.00	61.4	5.70	67.10

This table shows that with potatoes at a low price of 50 cents per bushel applications of 1,000 pounds of fertilizer gave largest net return, while with po-

tatoes at \$1.50 per bushel an application of 2,000 pounds per bushel gave the largest net returns.

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Use Good Seed Potatoes

S. J. HETHERINGTON, B.S.A. Market Specialist and Pathologist, Regina

Success in marketing potatoes, like success in many other things, is greatly influenced by the amount of careful thought and consideration given to the project when laying plans for the season's work on the farm. Various problems come up for consideration, all of which have some bearing on the subject, and the following paragraphs deal only with those that are urgent at the present time.

Produce for the Market

"Like tends to beget like. If you are going to produce what the market demands you must also sow what the market demands. It is too often thought that the smallest and poorest potatoes will be quite suitable for seed, but it is usually that carload of potatoes produced from the deformed, irregular, small, diseased, stock of unknown variety and pedigree that does not return the producer enough to pay the freight.

Undersize tubers as well as scab and other diseases are responsible for much of the dockage in marketing. Other things causing dockage are blemishes, frost injury, wrong sized sacks, delayed shipment, wrong variety, and sunburn. Most of these discrepancies can be overcome by the use of good methods and careful attention to details.

Use Good Seed Potatoes

It does not pay to waste time with seed that is diseased and "run out." One of the main causes of low yields of potatoes is poor seed from low yielding hills. Seed from high-yielding, disease-free hills will produce from 25 to 100 per cent. more than seed carelessly taken from a common field crop.

When a grower gets 300 bushels per acre, he thinks that he has done something wonderful, and he really has, measured by the average yields of potatoes, yet a 300 bushel per acre yield means only about three very medium sized potatoes to each hill.

Potato varieties do not "run out," it is the individual hills that "run out." Those farmers who surveyed their potato fields last summer and staked the best hills which were later harvested separately, have made the right start. When these tubers are hand selected, improved seed will be obtained.

While potatoes are generally recognized as an easy crop to grow, I think that all who have had any experience in growing seed for certification will agree with me, that the production of the best stock should not be undertaken by a careless person. Good seed potato growing demands definite and specific attention at certain well marked periods during the growing season.

Treat Potato Seed

Potato seed treatment is a necessary precautionary measure against certain diseases that live over winter on the tubers, but seed treatment will be found to be of little or no value if the potatoes are subsequently planted on land infested with disease-producing organisms, as ground that has grown potatoes for a number of years previous.

Potatoes should be treated in formaldehyde or corrosive sublimate before cutting the sets. Only medium sized tubers (nothing under two or over twelve ounces in weight) that are true to varietal type and free from diseases, discolorations, and deformities, should be treated for seed.

The following solutions are recommended:

1.—**Formaldehyde:** 1 pint formalin to 30 gallons of water. Soak two hours. This solution does not deteriorate and may be used indefinitely.

2.—**Corrosive Sublimate:** 1 ounce to 7½ gallons of water. Dissolve the corrosive sublimate in hot water. Use wooden utensils, since it corrodes metal. Prepare immediately before use and renew after treating 10 bushels of potatoes. Renew by adding ¼ ounce of dissolved corrosive sublimate to 7½ gallons of mixture. This solution is usually renewed four times before discarding. Soak the seed for 1¼ hours in the solution. **This liquid is deadly poisonous** and potatoes once treated should be kept away from children and livestock.

Keep Your Objective in Mind

If you are growing potatoes for a select or somewhat critical market where size, shape, variety, general appearance, and attractiveness of display count so much, then such precautionary measures as those mentioned above cannot be overlooked. We, who purchase potatoes for consumption in Saskatchewan, invariably prefer to buy the best looking potatoes. The housewife may not just recognize this fact, but still she does it unconsciously.

If you are growing potatoes to feed to livestock, you have a different object to think of. Grant it, then, that you will not need to pay so much attention to details, however, precautions are necessary so as not to pollute the soil with disease organisms. From whatever angle we look at it, our objective must be kept in mind, and in most cases where a surplus is produced on the farm the big objective is the ultimate market. The wise grower will try to meet the market demand for quality, insofar as he can economically do so.

ADVANTAGE OF SPROUTING POTATOES

Growers of early potatoes have long realized the advantage of sprouting their seed tubers by bringing them up out of the cellar in advance of planting and exposing in shallow trays in a light, fairly warm room, where they form stout, green sprouts, not readily broken off in handling.

It has not been so well recognized that a similar practice may increase the main crop in regions where the active growing season is too brief or tardy to permit full development of the standard varieties. Tuber expansion takes place chiefly after blossoming. The size of the crop depends largely upon the vigor of vine growth and the period of suitable weather between

blooming and the death of the tops. By forwarding growth and hastening the date of blossoming, sprouting frequently increases not only the yield but the percentage of dry matter in the crop.

At the Beaverlodge station this matter has been studied from several angles. Six years' work has shown, unvaryingly, a larger crop from sets having the white cellar sprouts left on at planting over that from sets having the white sprouts broken off, the average gain being 22.4 per cent.

A second experiment, run for four years, has compared sets cut from tubers kept dormant in a cool, dark root cellar, sets with white sprouts allowed to form in a rather warm cellar, and sets with green sprouts formed (before cutting, of course) in a light upstairs room. During the first two years the green and white sprouts showed up almost equally well, both greatly exceeding the dormant sets. In one wet season a two-thirds crop was actually grown from white sprouts only—no flesh at all attached. During the past two years white-sprouted sets have not acquitted themselves well in this particular experiment, whether because they decayed in the ground during a long wait for growing weather, or were subjected to fungicidal infection before treatment of seed, or from some other cause, is not known. Detached sprouts planted in 1923 produced no crop at all. Green-sprouted sets have invariably outyielded the dormant ones, the four-year average advantage from sprouting being 19.4 per cent.

For three years past, an extremely interesting date-of-planting test, conducted in co-operation with the Division of Chemistry, has shown that even in seasons of unfavorable May and June weather, early-May plantings have given the best average results where unsprouted seed was used, but late-May and early June plantings of seed cut from tubers that had been forming green sprouts for five or six weeks have generally given as large yields of total crop and of pounds dry matter per acre as have unsprouted tubers planted early.

If inconvenient to plant early the best plan will be to bring the seed potatoes up during the latter part of April, treat them at once with formaldehyde and put them to sprout in a light, frost-free place. Do not cut until ready to plant.—W. D. Albright, Superintendent, Experimental Sub-Station, Beaverlodge, Alta.

NORTH BATTLEFORD

At the organization meeting of the North Battleford Horticultural Society, held in the city hall, March 20th, 1924, the following gentlemen were elected provisional officers: Dr. G. H. Jackson, chairman; Messrs. A. H. Sergeant, P. F. Lanz, E. J. Wilkins, W. Fyfe, F. Sallows, directors. The first annual general meeting was held on Thursday, March 27th.

TUBER UNIT SEED PLOTS FOR POTATOES

In many sections of the country where seed potatoes are produced, the growers have found the advantage of having their own seed plots. A comparatively new method of planting these is the tuber unit system, i.e., all seed pieces cut from the same tuber are planted consecutively.

The tubers should first be graded for uniformity of type and size, using tubers from 5 oz. to 8 oz. in weight free from visible symptoms of disease. The plot of ground to be used should be well isolated from other potato fields. When this is ready to plant, the tubers (previously treated if desired) are taken to the field, and cut as they are being planted. The seed pieces from each potato are planted consecutively, leaving short gaps between the groups of hills from each tuber. Stakes may be used to separate the units, but the majority of growers who practice the method prefer to leave a gap equivalent to a "miss."

When the plants are about eight inches high they are carefully inspected and where one or more plants in a unit are found affected with mosaic, leaf roll, spindle tuber or other seed-borne disease, the entire tuber unit is rogued—every hill planted from the one potato. Care should be taken in all roguing to remove the entire plant. The plots are inspected two or three times during the season, and all undesirable plants removed.

The extra amount of time involved in planting tuber unit plots is well worth the trouble when a grower has a good strain of potatoes and wishes to get them as free from disease as possible. The most important advantages of this system of planting over the usual method are that all seed pieces from a diseased tuber are together and may be readily rogued and that selections for trueness to type and yield may be made by harvesting each unit separately. Moreover the chances of spread of degeneration diseases are reduced to a minimum on account of removing the entire unit, whether or not each plant from that unit shows disease symptoms at the time it is rogued.

This system is being used by a number of seed potato growers in other parts of the continent. It has been found far superior to the old methods of planting seed plots as mosaic, leaf roll, spindle tuber and other degeneration diseases can be more readily eliminated. There are many strains of high-yielding varieties of potatoes that should be planted for one or two years at least in tuber unit plots in order to eliminate degeneration diseases and bring them into good condition for certified seed.

Any grower desiring assistance in preparing a tuber unit seed plot may obtain such by applying to the nearest Dominion Laboratory of Plant Pathology.—J. F. Hockey, Pathologist, Laboratory of Plant Pathology, Fredericton, N.B.

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LILACS

(Continued from Page 221)

the central Korean lilac, *Syringa palibiniana*. The principal difference between these two species lies in the texture of the leaves, those of *Syringa palibiniana* being of a rather satiny texture, and in the color of the flowers, this species having pale pinkish buds, which become white as they open. Both are well worth growing for their fragrance alone. A rather remarkable thing about *Syringa palibiana* is that, though grown from seed collected on the Diamond Mountains of Korea in latitude 38, it has so far proved quite hardy here.

The next two lilacs to flower are *Syringa Josikea* and *Syringa Villosa*; these are rather similar in habit and shape of flowers, but the former has glossy leaves and deep lilac flowers, while the latter has dull green leaves and pinkish buds, which usually become white when fully open. *Syringa villosa* has rather a strong smell, which some people find rather disagreeable, though personally I rather like it. It develops into a large rounded shrub, reaching a height of about 12 feet and covering from 15 to 18 feet of ground. It is about 16 years since I secured this lilac from the Central Experimental Farm, and during that time I have never known it to suffer from winter killing or to fail to bloom freely. When in full bloom a well grown specimen is one of the finest ornamental plants that can be grown here; and as it is very easy to propagate, at least one specimen of it should be in every western garden.

Before *Syringa villosa* has quite finished flowering, *Syringa Japonica*, the tree lilac from the north island of Japan, usually commences to bloom. This species is quite distinct from any of those I have mentioned so far. It belongs to a small section in which the tube of the corolla is quite short and the anthers and pistils are quite visible, while in most of the other species these organs are hidden in the corolla tube. The flowers, which are creamy white in color, though small, are produced in very large clusters and usually continue until well on towards the end of July. Unfortunately this fine lilac blooms freely only every other year. The other two species belonging to this section, *Syringa Amurensis* and *Syringa Pekinensis*, are both under trial here, but have not yet reached flowering stage. Both are said to have white flowers.

A very interesting lilac, which has not proved quite hardy here so far, but may do so in southern and eastern Manitoba, is *Syringa Reflexa*. This species, which very much resembles *Syringa Villosa* in foliage and habit, has the flowers, however, in long, drooping clusters instead of being in upright panicles as in other lilacs. Miss Preston of the Central Experimental Farm staff has made a number of crosses between this and *Syringa Villosa*, but none of the hybrids, which have flowered so far, has developed the pendulous habit of *Syringa Reflexa*.

Syringa Wolfii, a species which is said to have been sent to Russia from somewhere in North China or Mon-

golia, has proved quite hardy so far, but has not yet flowered. It is said to be the finest lilac of the *Villosa* section, having remarkably long panicles of flowers, which various authors describe as being from deep lilac to violet in color.

The following species have not proved very hardy here so far: *Syringa Tomentella* (frequently called *Syringa Wilsoni*), *Syringa Affinis* and *Syringa Sweginzowii*. The Persian lilac lives and produces a few flowers on the lower branches, but is scarcely worth growing when so many fine forms can be had which are quite hardy.

ANSWERS TO QUESTIONS

(Continued from Page 225)

C. C., Raeburn, Man., Q. No. 1—What is the difference between "corms" and "cormels" with reference to *Gladiolus*?

A.—What is commonly known as the *Gladiolus* "bulb" is not a true bulb in the botanical sense, but it is known as a corm. Surrounding the base of the bulb there is annually produced a number of young growths known as cormels; these are approximately the size of peas, but vary in size according to the variety. These do not flower until they reach a flowering age—the age varies, but is generally between two and three years. Therefore, we would say that a "bulb" of flowering size is a corm, but below size or under age is a cormel.

Q. No. 2—How long after flowering should the bulb be left in the ground, so that a mature and properly seasoned bulb may be harvested?

A.—There is no set time that one can give to allow the bulbs to become thoroughly ripened. Some varieties do not bloom until just before frost comes and these must be lifted immediately

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P. A. LAESER Sun Prairie, Wis.

afterwards with a little soil adhering and allowed to dry indoors. Early blooming varieties where weather permits can be left a month or more after they bloom before danger of frost forces one to dig. If one wishes to get them out of the way regardless of frost a week or two is usually enough. Weather conditions prevent any stated time, because in a dry, warm season the length of time will be much shorter than in a cold, wet season.

Q. No. 3—Which perennial roots should be left in the ground all winter and which taken up?

A.—A complete answer to this would entail all perennials grown. Most perennials that are grown under the general term perennials are left in the ground all winter. The roots or "bulbs" of the following are always dug: Dahlia, Canna, Gladiolus, Tuberos Begonia and Caladium Esculentum. We feel sure you can safely take it for granted that outside of the above named plants, all the other varieties of perennials grown in the West are left outdoors.

THE CALL

Come let us fill our garden beds
With spinach, chard and cabbage
heads;
For all these leaves, beneath their
skins,
Are full of iron and vitamins.

MAPLES AND MAPLE SUGAR FOR THE WEST

P. FRASER, Kelvington, Sask.

It does not seem to be generally known in the western provinces that maple syrup and sugar of delicious flavor and quality can be made from the native maple or box elder (*Acer Negundo*).

This letter may be too late to be of use to any who wish to try to make some syrup this year, but it may interest someone enough to encourage the setting out of a grove of maples.

About thirty years ago the Indians who live around where the town of

Kamsack now is used to make large quantities of maple sugar from the trees that grew and still grow in the bends of the Assiniboine river, and in the spring they used to trade it off to the settlers for bacon or other foods.

Those Indians used to have an understanding among them as to which groves were to be tapped by a particular family, and in spring the various families camped in the groves, and

(Continued on Page 238)

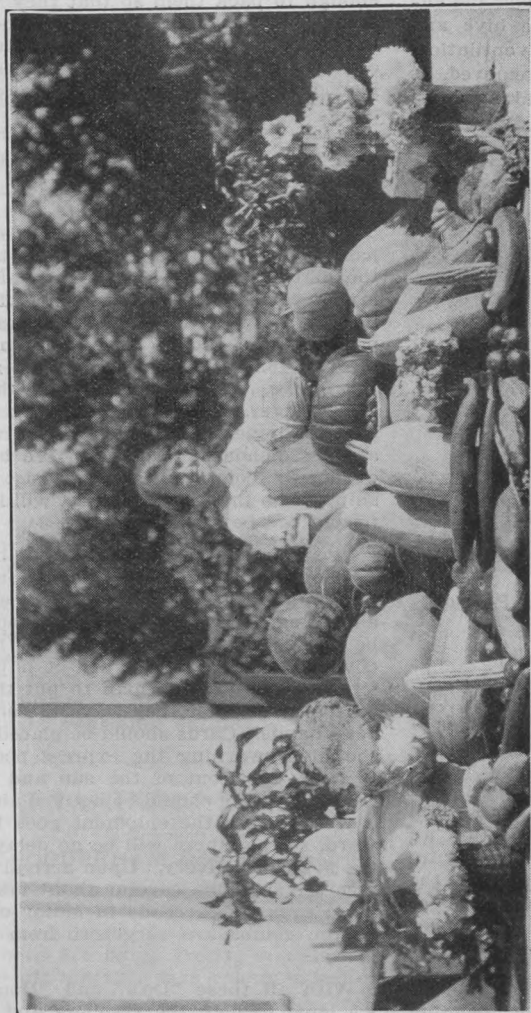
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THE ONLY
BEE JOURNAL
DEALING WITH
WESTERN
CONDITIONS

A COLONY OF BEES

L. T. FLOYD

Quite a bit of discussion has taken place during the past year regarding what a beginner should expect in a colony of bees purchased in the spring. This discussion was started by some who felt that they had been cheated when they sent their money and received in return, colonies that were not what they expected. Some were satisfied upon receipt of their shipment, but when visited by a beekeeper who claimed to have experience, learned later that they had been too easily satisfied.

This question was discussed at some length at our last convention and it was generally agreed that a suitable colony for a beginning should cover at least six or seven frames in a ten frame hive on June 1st. A colony of this strength would have about five combs of brood and all or nearly all of

the combs drawn out. Some shippers claim, and I believe rightly, that a colony of bees will ship better with one or two frames filled with comb foundation and inserted near the centre of the broodnest on the day before they are shipped.

In shipping hives full of bees, there is a great danger of them smothering on the trip and an empty comb or sheet of foundation will help to keep the cluster cool by allowing a better circulation of air. It is not safe to ship bees in hot weather with a piece of screen nailed across the entrance and the cover nailed on. Screens should be made sufficiently large to cover the entire top and bottom of the hive and this will allow for plenty of ventilation. Combs of honey should be removed, as there is danger of them breaking down

if the weather is warm and the hive roughly handled.

In the first place, there is no money in selling bees; it is better to keep them and secure a crop. It would not pay beekeepers to sell colonies at twice the price they are generally offered if the honey crop is average. However, there is always some risk as to whether or not there will be a crop, so some beekeepers think it good business to sell a few hives and pay for the containers for the new crop, and the other supplies needed.

If we are to gain the confidence of the public, I think that all shippers should guarantee delivery as it is easy enough to pack them so that they will stand confinement for a week or more, but some shippers have learned from experience that hives too full of bees or loaded heavy with honey invite disaster. Colonies should always be shipped by express, as freight shipments are sometimes delayed at transfer points for a week or more and are lost.

The purchaser of bees who finds he has been cheated has a right to take the matter up with the papers carrying the shipper's advertisement. This information is invited, as the papers do not want to make their columns a medium for the dishonest party to gull the public. I do not mean that there is a danger, but merely to point out that the buyer is protected in this way against dishonest practices. We hope during the coming season to assist the shippers so that mistakes that will lead to loss can be avoided.

In summing up, a colony of bees should cover six or seven combs on or before June 1st; should be screened above and below for shipment; should be shipped by express with the hive covers slatted so that it will be impossible for the express man to put them on the hives after they leave the shipper's hands. Cards should be placed on the hives warning the express people to keep them out of the sun and the receiving party should be notified about a week before the shipment goes forward, so that there will be no delay at the point of delivery. Upon arrival the receiver should be careful about taking them over rough roads in motor cars, as the combs are very soft from the heat.

With all these "Do's" and "Don't's" we hope to help the shippers and receivers and see that everyone gets a square deal.



Fred Stratton and His "Hobby"—115 Colonies of Bees—During the Period of Clover Honey Production.

NEW BEE LEGISLATION IN SASKATCHEWAN

At the recent session of the Saskatchewan legislature an Act for the Protection and Suppression of Disease among Bees was passed. This new legislation is in recognition of the development of beekeeping in Saskatchewan, and it is designed to prevent the introduction of bee diseases by requiring an annual registration of beekeepers and a declaration from such beekeepers that they will not import into Saskatchewan any bees on comb, brood combs, extracting combs, or any second hand parts of equipment which have been used in any apiary outside of the province unless accompanied by a

certificate acceptable to the Minister of Agriculture, showing the article imported to be free from disease. It is also designed to assist in the control of such diseases in case they should be introduced. In this connection all bees imported in hives or on combs are automatically quarantined, and the owners are not authorized to dispose of them or of any honey or appliances until permission is obtained from the minister and the bees are declared free from disease. Authority is given to the minister to order the destruction of equipment of any apiary where bee diseases are found to exist.

QUESTIONS AND ANSWERS

R. M., Caroline, Alta., Q. 1—How can honey be used without an extractor, as it will not pay me to get one?

Q. 2—How can I tell when the queen is mated?

A. 1—The comb can be cut from the frames and used as comb honey if the combs are newly built. To use the honey from old combs, it would need to be squeezed out as the combs would be too tough to eat.

A. 2—When she begins to lay worker eggs, you are sure that she has mated.

J. B. H., Rathwell, Man., Q. 1—Where do I get the required forms to register my apiary?

Q. 2—Is it necessary for a beekeeper with only one hive to register?

A. 1—Forms will be mailed to all beekeepers on the mailing list. Others may secure them by writing to L. T. Floyd, Extension Service, Manitoba Agricultural College.

A. 2—According to the Act: "No person shall own bees or have bees in his possessions unless he is the holder of a certificate of registration for the current year."

A. J., Oak Lake, Man., Q.—How do the new Dominion regulations affect the shipment of package bees?

A.—The new regulations affect only the shipment of bees on combs. Package bees require a declaration from the shipper that the stores are not made of honey, but that is all.

A. B., Whytewold, Man., Q. 1—How does British Columbia compare with Manitoba in regard to honey production?

Q. 2.—Is the quality of British Columbia honey as good as the honey produced on the prairie?

A.—For information regarding bee-keeping possibilities in British Columbia write to W. J. Sheppard, Provincial Apiarist, Nelson, B.C.

J. A. M., Marquette, Man., Q.—Explain the Demaree method of swarm control.

A.—The Demaree method which was given at length in the American Bee Journal, April 21, 1892, is as follows:

Transfer the combs containing brood from the brood chamber to an upper story above a queen excluder. One comb, containing some unsealed brood and eggs is left in the old brood chamber with the queen. Fill out the brood chamber with empty combs or comb foundation. Some leading apiarists place one or two stories of brood and the lower story of bees and queens. Of course, this depends upon the strength of the colony on which we operate. If done properly, the Demaree system prevents swarming entirely.

EXAMINING BEES

C. B. GOODERHAM, Dominion Apiarist

After the colonies have been removed from the cellar, they should be examined on the first warm day when the bees are flying freely, in order to ascertain whether each colony is headed with a good queen and the bees have sufficient stores. The colonies that were wintered outside should also be examined, but not removed from

their cases until they are working well in the first super, usually about the latter end of May.

This first examination should be as brief as possible in order to avoid any danger of chilling the brood. The presence of eggs and larvae will indicate that a queen is present. If the cappings over sealed brood are nearly flat this is worker brood, but if the cappings are decidedly raised this is drone brood and the queen should be destroyed. All weak and queenless colonies should be united to queen-right colonies of medium strength. If it is necessary, a weak colony containing a valuable queen can be saved by placing it over a strong colony—first being sure that the weak colony has some brood. If none is present, supply a comb containing a small patch of brood from the strong colony over which the weak is to be placed. In the evening remove the cover from the strong colony and fit on a queen excluder, over the excluder placing the weak colony, without its floorboard. Do not disturb the bees any more than is possible or the queen in the upper hive will be killed. Two or three weeks later, move the hive containing the most brood to a new stand.

Each colony should have at the first examination from 10 to 15 pounds of stores. If there is no disease present in the apiary, combs of honey may be taken from the colonies having a surplus and given to those that are deficient. As most of the stores will be found in the outside combs, these should be moved up close to the brood. The bees will use this honey much faster if the cappings are first broken. If combs of honey are not available, the light colonies must be given syrup made from sugar or honey. Do not spread the brood, as this is likely to cause a heavy loss through chilling.

Every colony now having a queen and a sufficient amount of stores, a second examination is not necessary for another two or three weeks, especially if the weather remains cool. At the second examination, see that the queen is supplied with sufficient room for brood rearing, that enough stores are present for the bees. Where hives smaller than 10-frame Langstroth are being used, it may be necessary to increase the size of the brood chamber by adding another super. Do not allow the brood chamber to become congested with bees or honey or preparations for swarming will be made. At this examination watch carefully for disease.

HONEY AS A SIDELINE

In a normal summer bees, in good health, and under moderate care, can store much honey in Manitoba. A large tonnage of honey is still imported annually into the prairies. The honey crop gathered on the prairies is steadily increasing along with a steady increase in consumption, but there are many localities in which no honey bees are found. In such places the person keeping a home apiary should find an especially good market for his surplus produce.

It may be questionable as to whether it is wise to encourage large numbers of people to go into bee-keeping as a main line of enterprise. However, it does seem that there is a place for two or three hives of bees on many of our farm homes. Such a small home apiary does not require a heavy capital expenditure and does not call for a great deal of time and labor. It affords an interesting, outdoor sideline which is remunerative.

Honey is a wholesome food which provides a pleasing variety in the diet. What is not required for home use may be sold as extracted honey, as comb honey, or as "chunk honey," when the frames become broken. Aside from the revenue gained from these sales, frames of early honey may be saved until the following spring and sold at a good price to neighbors importing packet bees. It is well to have some such frames for these bees until the nectar flow begins. There is also sale for frames of drawn comb and for bees. In using combs of honey for package bees or in the sale of drawn combs, great care must be taken that such combs do not come from diseased colonies.

A small home apiary may well be expected to supply produce which can take its place along with butter, cream, eggs, dressed fowl, cured bacon, fruit, garden stuff, and flowers, as commodities which command ready sale.

The Dominion apiarist has a new edition of "Bees and How to Keep Them," Bulletin No. 33—New Series. This makes a comprehensive guide for the beginner and interesting reading for the experienced apiarist, and may be obtained free by sending to the Publications Branch, Department of Agriculture, Ottawa. No stamps are required on letters to this address.—W. R. Leslie, Superintendent, Dominion Experimental Station, Morden, Man.

USES OF COMB FOUNDATION

L. T. FLOYD

This is the season of the year when plenty of comb foundation should be ordered for the summer's work. Full sheets only should be used and these well wired into the frames. It is useless to place foundation in frames unless they are first wired.

Comb foundation calls for perhaps a larger outlay in money than any other part of the equipment, but it is an expenditure that pays every time. Sometimes when the honey flow is on and foundation cannot be secured, the operator is tempted to give empty

frames or frames with half sheets. If these are given a strong colony will nearly always fill the blank spaces with drone combs.

In hiving swarms if foundation is scarce, it is better business to use inch starters, however, than to use half sheets. A swarm of bees, if hived on inch strips of foundation, will build worker combs so long as the queen follows closely the comb builders, but as soon as they get ahead the balance

(Continued on Page 239)

Swarming to Escape Adverse Conditions

Address of PROF. H. A. SURFACE, Reported in the Chicago "Packer"

At the recent annual meeting of the Pennsylvania State Beekeepers' Association in Harrisburg, Prof. H. A. Surface, of Susquehanna University, Selinsgrove, Pa., was called upon to speak on the subject, "What Causes Swarming?" He said that he was prepared to propose and defend the thesis that "All swarming is to escape adverse conditions." By "adverse conditions" is meant any kind of condition that is unfavorable to the bees or the queen or both. "Most persons," he said, "seem to think that swarming is for production of increase, or nature's method of increasing the number of bees, in other words, providing for the perpetuation of the species; but it is well known that successful beekeepers now measure their success not by the number of swarms they produce in their apiaries in a season, but by the number they prevent, and many beekeepers have used such methods of manipulation as to prevent certain colonies from swarming during the past several years. The best and strongest colonies are those that have swarmed the least, and by virtue of swarm-prevention through dividing the colonies there have been far more individual bees, or 'increase,' produced than there would have been produced if they had been permitted to swarm. In other words, the colonies that in the hands of skilled apiarists have not swarmed have produced far more bees or increase in numbers than though they had been neglected until they swarmed. Also, before bees swarm the queen gradually ceases laying, until she stops laying entirely at swarming time, when, if the same queen had been kept industriously at her business of egg-laying the number of individual bees in that quality would have been far greater than that actually produced under the swarming conditions. Also, when bees have a very large hive, large tree, or other favorable place to continue to exist in comfort they do not swarm, but the queen continues to lay eggs and increases the colony to one of tremendous size by great number of new individuals thus brought into existence. Also, when the place for the bees to live is small, as in an eight-frame or other small hive, they soon become crowded and swarm out, not for 'natural increase,' but to escape the discomforts of an over-crowded hive.

"The above facts prove that swarming does not produce increase of individuals, or the maintenance of the species, but reduces it, while by giving the bees more room and comfort there are more bees or offspring produced, (although no swarming) than when they swarm. Therefore, swarming can not be for propagation, because it does not result in this.

"Increase or reproduction comes from the laying and hatching of eggs, and not by dividing the rooms containing the product or offspring. This is well illustrated by the increase of the flock for a poultryman who obtains his increased numbers by having more

chickens hatched, and not by dividing what he has by putting them into a greater number of houses or pens.

"Now, what are the different kinds of swarming, what causes each, and how is it to be prevented? First, there is the common honey-flow swarm, which comes when they are rolling in the honey and filling every possible corner with it. The bees become crowded, they have no place to put their loads, the interior of the hive becomes hot and 'stuffy,' and the queen has no place to lay. The workers begin to build queen cells. As soon as the first of these is sealed or capped the old queen realizes that a new queen will soon emerge and there will then be a royal fight for supremacy, and by swarming she escapes the 'adverse condition' of a fight which would probably be 'to the finish' for her, while also by swarming her workers escape the unbearable 'adverse condition' (for them) of an over-crowded, hot and poorly ventilated hive. See how easily all this can be prevented by giving the workers plenty of room and ventilation and cutting out the queen cells that would give young queens to threaten the old one.

"Next, there are the 'after-swarms.' These are small second or later swarms that come out after the primary swarm and are accompanied by a virgin or unmated queen. Haven't they plenty of room? Perhaps so. Then what 'adverse condition' made them swarm? The young queen left one or more young queens in that hive, and it was to escape an inevitable battle with them that she left it. See how easily this can be prevented by being sure that there is but one queen cell or young queen left in the hive after the first swarm goes out.

"Then there are second, third, or even fourth 'after-swarms,' from the same cause as the first 'after-swarm,' and this business may continue until there is only one young queen left in the hive. Then, and not until then, will it stop.

"Next, there is the 'starvation swarm,' caused by bees using all their stores or honey and realizing that they will starve to death if they stay there, and swarming out to 'take pot luck' on finding less 'adverse conditions' than in the old, empty, hunger-giving hive. Small starving colonies often have been seen in very early spring or during prolonged wet weather entirely to desert their hives in 'starvation swarms' when their food was all gone. This kind of swarming can be prevented easily by feeding them.

"Next, there is the foul hive swarm. Let the hive become badly befouled, as by a dead rat which they can neither remove nor entomb in propolis, and see them swarm out to escape such offensive condition; or, as is well known, try hiving a new swarm in a foul hive, and see how soon they will produce a 'foul-hive' swarm and abscond for a nice sweet-smelling

hollow tree. On the other hand, give a new swarm a nice, clean, well-ventilated hive, with no 'adverse conditions,' and see how soon they will settle down to business, unless scouts previously sent out should return and report having found a more suitable condition elsewhere.

"It may be cited that a colony may be preparing to swarm, and even have queen cells started, and then if a prolonged wet spell of weather should come, with no nectar coming in, they will break down the queen cells and refrain from swarming. Exactly! This is to enable the colony to escape the very adverse condition of facing starvation by swarming when they cannot get food in their new quarters, and to prevent the necessity of a fight between their old laying queen and a new unmated queen. Yet if the old queen is declining they will rear a new queen in a remote side or corner of the hive, and the two queens will live together in harmony while the old queen is gradually superceding her. Thus there will be no 'adverse conditions,' no fight, and no swarm.

"Keep the bees comfortable by plenty of room and ventilation with room for the queen to lay; divide the colony when it commences to be too populous, or give more room and ventilation—especially keep a ready super just over the brood chamber, and, if necessary, cut out queen cells, and see how this absence of 'adverse conditions' will result in less swarming and in both more bees and more honey.

Winter Apiary Losses Amount to 12 Per Cent

The winter loss suffered by beekeepers in the United States, according to investigations made by the Department of Agriculture, amounts to 12 per cent. of the swarms. The conclusion of the investigators is that any industry which can stand a loss of 12 per cent. of all the animals in it can probably be made much more profitable by removing the cause which is possible to a considerable extent. This winter loss is the largest loss suffered by honey producers, but it is not so discouraging as losses from diseases, as a disease often menaces the entire apiary.

The department has studied the question of proper temperature and other environmental conditions of the hive in winter and has published information which makes it possible to cut down the great loss. Many beekeepers have availed themselves of this information, but the great winter losses of bee population will not be much reduced until more persons in the business make use of what is known about management. The man who keeps up with the newest information is the one who will make the greatest profit from his bees.

Honey Bee the Fruit Grower's Friend

MORRIS SPENCER

Having made a life study of the care and management of the honey bee, beginning when a boy in my teens to hunt bee trees, catch swarms of bees and make homes for them out of cracker boxes, I have observed many things that can be said in favor of the bee, one of these being its work in the fertilization of flowers, plants and the like. In many cases it is a case of life and death to the plants that the bee can fertilize its flowers, this method of fertilization by the bee being the only method of reproducing the plant.

All fruit growers, seedsmen, etc., are anxious to produce the best, hence a few hives of bees nearby is the best of friends. In California one will find large groves of oranges, lemons and other fruits, where the bee is at home when the bloom is on the tree; while in the fields one can see thousands of acres of beans, peas, etc., where a few hives of bees are welcomed as the best of friends, a small piece of ground often being laid out for the bees.

This study of the fertilizing of flowers, plants, etc., by the bees is one of the finest of studies after one has put in years at it. One will soon be able to see that there is a steady battle going on in plant life, the bees and insects acting in the help of reproducing the plant of the same kind.

In attracting the bee to its flower it becomes a case of the most attractive flowers winning out, hence the flowers are steadily gaining in brilliancy. The fruit grower, seedsmen, etc., often cross fertilize the flowers or trees or plants by transferring the pollen from flower to flower. This same work is done by the bee in nature's work, this being where we often get our new plants in our mountains, where plants have only the bee to act as the agent.

About all plants have sex organs, in many cases both being in the same flower, but far more often one will find each flower has a sex of its own.

Each plant and flower has developed a method of transferring its pollen from flower to flower and this is where the bee becomes so valuable. Some plants and flowers even use the wind to transfer this pollen and this is where nature practises its economy, by producing no honey in the flowers of such plants or trees, such as in the willow or many of our pines we find this.

In fertilizing all flowers the bee must force its head into the flower, after the honey. Right in the middle of its back is a small hairy patch, looks like velvet. As the bee reaches for the honey this small hairy patch brushes by the little stamens that are covered with pollen in the flower. If it is of the opposite sex than that on the back of the bee, the flower is fertilized at once.

Nature has made good use of all these millions of grains of pollen, that would otherwise go to waste, by having the bees gather it from the flowers and feed it to the young larvae of the bees in the hives. That is, larva after be-

ing hatched from egg of queen is fed this pollen, honey and water for six or on one's clothes, thus spreading seed.

One very interesting method of some trees and plants is to place its seed in a small ball, that looks like cotton. When ripe this is blown by the wind for miles before it falls to the ground to make its growth, thus spreading the plants over the country. Again, many plants gain the same thing by having its seed catch in the hair of animals or on one's clothes, thus spreading seed.

One very interesting provision of nature is noticed in countries where ants are plentiful. The ants are always after honey, if they can find it. So they climb the stalks of these plants and bite into the base of flower, taking out the honey until the plant seems to realize that if some method does not come soon it will become extinct. So it began to secrete a kind of sticky gum on the stalk of the plant so ants could not climb the stalks, thus calling the bee back again to act as its agent for fertilizing.

One very good lesson along this line of the fertilizing of plants can be noticed in a cold, foggy spring. When the bees cannot get out of their hives to fertilize the fruit tree flowers, we hear the crops are short. Take the case of all of our grains; the plants all stand so close together that all are fertilized. The wind causing the grain heads to brush, or strike together. Again where a tree or plant may have both sexes of the flower on the same tree or plant nature is very careful, by having only one sex on a tree bloom at the same time, thus avoiding inbreeding by having the pollen from one tree fertilize the flower on nearby tree, the bee or the wind carrying the pollen.

The honey bee is always on the lookout for pollen, so if there is no pollen to be had by the bees the beekeeper must produce an artificial pollen, corn meal being often used.

The honey bee seems to try to help out nature all it can by working only on one variety of plant at a time,

while it is producing honey, thus being the variety that gives the most honey. It often looks to me as if nature even went so far as to have one variety of plant bloom after another. But in this case where one plant may start to bloom while another is blooming and producing more honey, hence the bees refuse to gather from second plant, it lays dormant and waits for the bee to call on it. That is, take the California sage, which at times produces as much as eight or ten pounds of honey to hive per day, the bee refuses to leave it for any plant, regardless of its beauty.

We can see by the above that the plants are putting out an advertisement, calling the bee to them and giving pay in honey, while other flowers, that may have great beauty, may call the butterflies or often the hummingbirds. In all cases the pollen is distributed just about the same time.

Scientists teach us that the flowers are getting more beautiful every day. They even tell us that some plants become fertilized in the water, and that all plant life began in the water, which is a little hard to believe, after one has spent years studying the flowers and plants outside on our hills.

Of course, the honey bee has to have a few faults, one of which is that once in a while she will sting. But by breeding only pure Italians, imported from Italy, one can raise bees that hardly care to sting. Again, she will steal a little fruit after it gets too ripe and breaks the skins open and again she will bother around where they are drying fruit or grapes in the open.

The honey bee is an undeveloped female, this being brought about in the hives by the feed being withheld from the larva when developing.

Take the flower of our naval orange, it being a cross, or hybrid, caused by grafting instead of growing from seeds. Even in this case the pollen that the bee distributes from flower to flower makes better oranges, even though it's of no use to keep up the naval stock.



Honey Exhibit of George E. Moss at Souris Horticultural Show, August 31 to September 1, 1923. First Prize for Extracted Honey.

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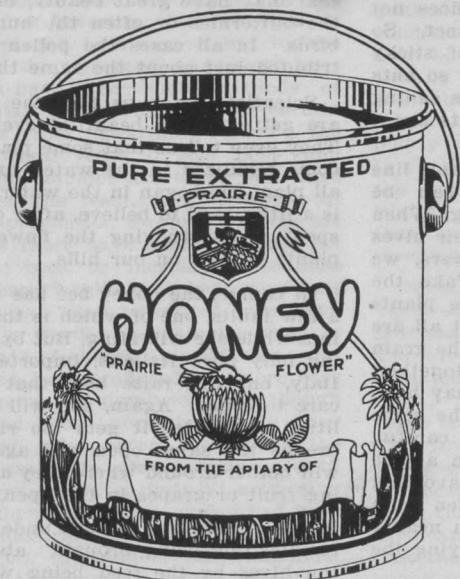
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How to Start an Apiary

FRANK A. SMITH, M. D.

There will always be controversy as to the best method to adopt in the starting of an apiary, but, there is never the slightest difference of opinion among those who have kept bees as to their desirability as an inexpensive and even lucrative hobby. More books have been written on this subject than on the history of any country, and many men have given it a life-time study, dating back to our earliest knowledge of human existence.

Our wild bees in North America are simply tame bees that escaped in swarming time from colonies brought over from Europe over 300 years ago. They were black bees, small and hardy and are still to be found in some apiaries in the east. They are, however, being superseded by the Italian Golden bees as these have been found to be easier to handle and on the whole more profitable and more resistant to bee disease.

Just a word about bee disease. There are almost no bee diseases. Almost all are diseases of the larvae, they are not transmitted to the adult bee, the germs that cause these are easily found and there is absolutely no danger to human beings in the honey. In fact the disease is usually self limited. The colony soon dies as the worker is not replaced. There is practically no honey from an apiary containing any disease. The greatest danger to an apiarist's success exists in the presence of foul brood.

The Golden or three banded bee is recognized as the best variety to purchase and my experience would suggest that a beginner had better invest in from two to five hives, preferably but not necessarily 10-frame hives, to make a start and to get some very necessary experience. I know of no better way to get stung than for one who is without experience to purchase a large number of hives at the beginning of his or her career as an apiarist. Later, if you will, build up by buying package bees or nuclei from some dependable dealer with an inspected apiary. Package bees are best if they are coming from outside the province and a two-pound package with untested queen will develop into a strong colony by fall. Better be sure to have safe delivery guaranteed as many things may happen on the journey. Nuclei are simply frames of brood with clustered bees and queen, and if you are sure of freedom of disease, this is probably the best way to build up. (You are not allowed to import nuclei at the present time, so these must be purchased locally). Once again be sure the apiary has been inspected.

If I might change my subject—Be sure to join your local association, take their official magazine, obtain provincial registration and see that your neighbor does also. Purchase a good reliable work on bees for careful study, there are many of these, each very excellent, but the "A. B. C. and

X. Y. Z. of Bee Culture," by A. I. Root, is very easy to read, concise in detail.

The Hives to Get

Standard hives are the order of the day and the 8 and 10 frame mentioned refer to the number of frames in each hive. Each frame is of wood, a standard size, and supports a sheet of wax foundation on wire and on which the bees build their cells of wax (comb) which are to contain brood or honey. These are not often mixed and the brood is placed in regular order, usually in the middle three or four frames in the hive.

Your hives should arrive in good order, each containing several frames of workers with a laying queen and she should preferably be under a year: this fact, of course, you will have to obtain from your dealer. If bees do not arrive in good order your dealer should know at once, it is not necessary to send back the hives, but most dealers require some proof such as the dead queen and he will usually send nuclei or package bees to make good the loss.

A great amount of air is necessary to a colony of bees on a journey, and the shipper provides for this according to his own idea, usually the cover is raised on blocks, after a screen has been placed over the hive, the screen must be removed, and the cover replaced after the bees are placed on their stand. A few handfuls of water

(Continued on Page 240)

HONEY CONTAINERS

CORRUGATED BOXES

—FOR—

Packing and Shipping — Western Honey

SUITABLE FOR EITHER—GLASS or TINS

CHEAPER THAN WOODEN BOXES

WEIGH LESS AND SAVES IN FREIGHT OR EXPRESS

EASIER HANDLED—LOOKS BETTER

COMPLETE AND READY FOR SHIPMENT AS MANUFACTURED BY—

LONDON SHIPPING CONTAINERS, LTD.

LONDON

::

ONTARIO

Western Representative:—

Arthur C. Pratt,

126 Lombard Street, Winnipeg

ITALIAN BEES

Full Colonies, \$20.00

New 10 Frame Dovetailed Langstroth Hives
10% Discount cash with order.

May Delivery—Satisfaction Guaranteed

J. W. VANSTONE
EAST KILDONAN, WINNIPEG

* **BEES FOR SALE** Spring delivery, 8 *
* frame hives, \$15; *
* 10 frame hives, \$18. 20% now. Book- *
* ing orders May delivery. Mail order *
* course on bees free to purchaser. Strong *
* hive starting May makes 75 to 200 lbs. *
* surplus honey in season. References. *
* **DR. F. A. SMITH, 421 Somerset Bldg.,** *
* **Winnipeg** *

Mott's Northern Bred Italian Queens

Just a fence between Ontario, Canada, and Michigan, U.S.A. Save the vitality of your Queens from the long trip from the far South. All selected Queens.

Selected, untested, \$1 the season through.

Selected, guaranteed pure, \$1.25.

Selected, tested, \$2.50.

Plans: "How to Introduce Queens," 25c.

E. E. MOTT
Glenwood, Michigan, U. S. A.

GRAY CARNIOLANS

are hairy, extremely prolific and as honey gatherers are unexcelled. Highly disease resistant, winter admirably and build up very quickly in the spring. The logical bee for Canada!

Write for Our Free 8-Page Circular, which gives their description, merits, prices of Queens, etc. Write today.

W. A. HOLMBERG, Denair, Calif., U.S.

ITALIAN BEES

Full Colonies; Nuclei, Queens, Beekeepers' Supplies. Write—

SLOCAN VALLEY APIARIES
Slocan City., B.C.

ITALIAN QUEENS

For Early Delivery

Three-Bands that Hustle, Goldens that will please you.

One, \$1.00; dozen, \$11.50. Honest Service and satisfaction assured.

MELVIN TALLEY

Rutledge, Ala. U. S. A.

BIG BRIGHT ITALIAN QUEENS

The kind that gets the Honey. Untested, \$1.00; per dozen, \$11.00. Select untested, \$1.25; per dozen, \$12.50. 2 lb. package, \$3.75, without queen. I guarantee pure stock. No disease, safe arrival and perfect satisfaction.

P. B. SKINNER
Greenville, Ala., R. 5, U. S. A.

PACKAGE BEES

2 and 3 POUNDS

We claim that our Italian bees and queens are as good as money can buy, and are of the best honey gathering strains obtainable. There are none better. Receive fresher bees, and save express charges. Circular free.

VAN'S HONEY FARMS
HEBRON, INDIANA

The Temperament of the Bee

Before considering this subject, it may be as well to define what we mean by temperament, lest it be confused with temper. By temperament we shall understand the general mental condition of the bee, and temper forms a necessary part, but only a part of this condition. We are all aware that the bee is a creature whose whims are to be respected, and whose domain is invaded more or less at one's peril, but perhaps we have not given the matter that degree of attention which it deserves. It may be that we have confused this matter of temper with the mere physical ability to sting. It should be clear that the possession of a sting does not of necessity mean that the sting will be used at every available opportunity. The bee has the power to sting, but whether it will use that power instantly, after a period, or not at all, is dependent on its temper. It is a matter of common knowledge that some bees are much more prone to sting than others, and our experience is in favor of the fact that, though all bees have the power to sting, yet that some are much more likely to sting than others. Different races, and different strains of the same race, vary considerably in this respect. It may be said, with little fear of contradiction, that the Black bee is more aggressive than the Italian, speaking, of course, of the average of each race. At the same time the difference between the most vicious and the most gentle of each race is remarkable. At one time I had a stock of Italian bees that were exceedingly gentle to handle, though at the same time they appeared to resent the attentions of their own. They would fly round and make a pretence of being very angry, and at times would even attack me, but the curious point was that instead of stinging they would bite. I could feel the prick of their tiny jaws, and often I have been amused at their mock savagery. In contrast to these we have bees that will leave a sting in one before there is time to realize that an attack is being made.

Can the beekeeper do anything to alter the temper of his bees? Most of us are probably agreed that bees are made worse by careless methods of examination. In other words the impatience of the beekeeper is transferred to the bees. Anyone who roughly snatches off the quilt, or who examines them immediately they have been smoked, or who picks up frames carelessly so that the bees are jostled and rolled over one another, always has ill-tempered bees. Similarly, jarring of the hive is interpreted by the bees' long experience, as the presage of an attack, and immediately the instinct of self defence is aroused, and as the best defence is attack, the same result is produced—ill temper. If you have no time to examine the bees gently, put off the inspection if possible to the next day. As rough handling will make bees more aggressive, it may also be possible that continued gentleness will gradually lull their suspicions and so render them more docile. At least careful manipulation will not make them worse. It must never be for-

gotten that the bee's sting is a natural weapon of defence, and that without it the bees would be at the mercy of many creatures that now take pains to avoid them. In fact the possession of a sting and the storage of honey are so intimately related, that the honey storing instinct has only developed under the protecting shadow of the sting. We should not be annoyed that bees sting sometimes, but should rather pride ourselves that by careful management, we can penetrate the mysteries of the hive without this necessary protecting instinct being brought into use.

The other most important point in the temperament of the bee is its reaction to the conditions that produce swarming. Whatever the actual causes of swarming may be, and many reasons have been given, there is no doubt that till a young queen is reared, there is no chance of a swarm. The final cause is therefore the presence of a young queen or of a ripe queen cell in the hive. Now various races of bees show marked differences in the number of queens they rear, and more than that, in the time they take to bring them to maturity. There is, of course, a recognized period which elapses from the time the egg is laid to the time when the queen is due to emerge. Any larva not more than three days old can complete its growth as a queen if the bees continue its diet of royal jelly. The time taken, therefore, to produce a queen depends on the age of the larva selected. Now some bees are so long rearing a queen that they seem to rear queens from the egg, while other races produce them so quickly that they must choose large larvae for the purpose in order to lose as little time as possible. In my experience, the bees that choose large larvae are also those that appear to take the greatest delight in the

PURE ITALIAN BEES

Customers report as high as 300 pounds per colony from last year's shipments.

Price, \$20.00 per Colony

PACKAGE BEES

2-lb. Package with Queen.....\$4.00

3-lb. Package with Queen.....\$5.00

F.O.B. Shipping Point.

For Shipment after May 12th.

We Guarantee Satisfaction

W. G. STANBRIDGE E. Kildonan, Man.

QUEEN BEES

Best Italian at Lowest Prices

Untested, one, \$1.25; six, \$7.00; twelve, \$14.00. Write for descriptive circular and prices per 100, also for prices on bees by the pound.

MIDDLE TENNESSEE APIARIES
COLUMBIA - TENN., U.S.A.

ITALIAN QUEENS

Bright Three Banded

Select, Untested, \$1.00 each. \$10.00 per dozen.

Pure stock, no disease and satisfaction guaranteed.

Booked to capacity on packages, thanks.
J. J. SCOTT, Crowville, La., U. S. A.

presence of royalty. They produce many more queens than the bees that raise their queens from very young larvae or eggs. The presence of a large number of queens will of course affect the number of after swarms, so that the swarming instinct and the queen rearing instinct are mutually interdependent.

These are probably the two most important points in temperament. There is also the habit to collect honey on every available occasion, and it is often said that some strains are better honey getters than others. This, however, is not merely a matter of temperament, but is the result of a number of conditions, and the effect of each is not easy to determine. Briefly the conditions are: The number of bees in the colony, the waste of time when the swarming and queen rearing instincts are being satisfied, and the physical strength of the bees should food be scarce near their home. Of these three, only the second one can be classed under the heading of temperament, and this has already been discussed.—By J. N., in the Welsh Beekeeper.

Some Beekeeping Records

The results obtained from bees at the Dominion Experimental Farm, Lethbridge, are quite satisfactory, each year's work proving more conclusively that beekeeping in the irrigated districts can be made a profitable industry. Hundreds of tons of nectar are being produced in the bloom of the extensive alfalfa fields already established, needing only the assistance of the bees to be formed into valuable honey. Surely here is a by-product of the farm now wasted that should be turned into a revenue producer. Several farmers on irrigated lands in Southern Alberta have become convinced of this and are helping make the farm pay by keeping a few colonies of bees. Some fair-sized commercial apiaries have also been started.

Nine colonies were put into winter quarters at the close of last season, seven of these were wintered outside in wintering cases and two in a dug-out cellar. The cases used for outside wintering were boxes made large enough to hold one, two or four hives with sufficient room between the hive boxes and the bottom, sides and top of the boxes to pack in four to six inches of planer shavings. A tunnel was made from the hive entrances to the outside of the packing cases so that the bees could get out at will.

The colonies wintered in the cellar were placed on a swinging shelf to eliminate damage from mice. The covers of the hives were replaced with cloth and covered with five inches of chaff to prevent moisture gathering in the hive.

Two of the seven colonies wintered outside were found dead in the spring while both colonies wintered in the cellar survived. The two colonies wintered in the cellar, however, were weak in the spring, the first examination showing only three frames covered

(Continued on Page 240)



WANTED! 500 Men and Women

To Buy Our Guaranteed Bees
and Queens for Spring De-
livery. Booking Orders Now.



FROM MARCH 1ST we will furnish Package Bees with Queens as follows:—

1 3-pound package with untested Queen.....	\$5.00
25 or more. Each	\$4.75
One 2-pound package with Queen	\$4.00
25 or more. Each	\$3.75

Safe Arrival and Satisfaction Guaranteed.

Light 3-Band, or Dark Leather Colored Queens.

10% Books Your Order.

W. H. MOSES & SON

Lane City, TEXAS, U.S.A.

GRAY CAUCASIAN, GRAY CARNIOLANS and THREE BANDED ITALIAN QUEENS

Pure Stock and Fine Hustlers Guaranteed

The Gray Bees are best for the Great Northwest. Vigorous early brooders.

Untested Gray Queens, \$1.25 each. Tested, \$2.00. Italians, 25c less.

Descriptive Circular Free.

GRANT ANDERSON

Waco, Texas, Rt. 2

ITALIAN AND GOLDEN QUEENS

Also Carniolan for the 1924 trade. Best stock and service guaranteed. Tested, \$1; untested, 75c each. Reasonable discount on large orders. For bees in packages and nuclei, write for prices.

C. B. BANKSTON, Buffalo, Leon Co., Texas

Triphon Central California Queens

Queens and pound Bees from one to one thousand. Good stock from good breeders

2 pounds of Bees with selected untested Queen.....	\$3.50
2 pounds of Bees without Queen.....	3.00
1 selected untested Queen.....	1.00
1 selected tested Queen.....	1.50

For large orders 5% discount. Send your order early.

G. J. TRIPHON

Dixon

::

California

QUEENS AND BEES PRICES, 1924

	To March 15th	Mar. 15th to Apr. 30th	May 1st or later
Untested Queen	1.75	1.50	1.25
Tested "	2.50	2.00	1.75
Sel. Tested "	3.00	2.50	2.25

BREEDING QUEENS IN ONE FRAME NUCLEUS \$10.00 TO \$25.00

NUCLEI—NO QUEEN

	To March 15th	Mar. 15th to Apr. 30th	May 1st or later
1 Frame each	2.00	1.75	1.50
2 Frames "	3.00	2.75	2.25
3 Frames "	4.50	3.75	3.00
4 Frames "	5.50	4.75	3.75

BEES—NO QUEEN

	To March 15th	Mar. 15th to Apr. 30th	May 1st or later
1 lb.	2.00	2.00	1.75
2 lb.	3.50	3.50	3.25
3 lb.	5.00	5.00	4.00

Add price of Queens you order to above prices on Nuclei and Package Bees
WRITE FOR PRICES ON LARGE QUANTITIES OF BEES, QUEENS AND NUCLEI
It is well to book your orders in advance so as to insure delivery when wanted. Send 10 per cent. with order and the balance before shipment goes forward.

ROY C. PATTEN, Kings Lane, Whittier, Calif.
PHONE 4343

There is NO EMBARGO FROM BEDFORD, QUE. on Leather Colored Italian Bees

We Guarantee Absolute Freedom from Contagious Bee Diseases of Any Kind Among Our Bees. We Offer for Early Shipment:—

Full Colonies of Bees on Hoffman wired frames, in brand new hive bodies with Tested Queen in each hive at \$14.75 each in 9 frame Model Hive Body, or \$15.75 in 10 frame Simplicity Hive Body. If you wish for white painted hives complete with cover and bottom add \$2.00, 5% discount on orders for 5 or more.

Three Frame Nuclei, including Untested Queen and three Hoffman combs filled with bees and brood at \$6.50 each, less 5% for 11 or more.

East of the Rockies we guarantee safe delivery to any express office on the above.

We ship Pound Packages of Leather Colored Italian Bees as well. Get our Catalogue No. 42—it gives all the details.

F. W. JONES & SON Bedford, Que.
Largest Breeders of Italian Bees in Canada

PACKAGES QUEENS NUCLEI THREE BAND ITALIANS

We have shipped bees in packages and nuclei to Canada for several years with the very best of success. We have shipped hundreds of packages without the loss of a package. Our loss average the past season was less than one package for every hundred shipped.

We would appreciate your order. Health certificate with every shipment. Safe arrival guaranteed. All shipments go by express.

PRICES FOR APRIL AND MAY DELIVERIES

Two pound package or two frame nuclei with queen, \$4.50 each; 25, \$4.00 each; 50, \$3.75 each.

Three pound package or three frame nuclei with queen, \$5.50 each; 25, \$5.00 each; 50, \$4.75 each.

Circular Sent Upon Request.

COTTON BELT APIARIES - - - **Roxton, Texas**

MAPLES AND MAPLE SUGAR FOR THE WEST

(Continued from Page 229)

they tapped all the trees from four inches in diameter up to the largest every year without apparently doing the trees any harm.

The Indians made cuts with an axe on the tree on the outer side of any bend about a foot or eighteen inches from the ground or wherever a suitable bend occurred and in this cut, a chip of wood was inserted with a downward slant, this chip projected from the tree a couple of inches or more, the sap then ran down the chip and dripped into some vessel placed on the ground to receive it. The Indians at one time used small pans made of birch bark to catch the syrup. Nowadays they use tin cans. Those birch bark pans were also used for molds for the cakes of sugar.

The Indian method for evaporating the sap was as simple as could be, and consisted of boiling the sap in an open pot over a camp fire, a bunch of green maple twigs or a piece of pork fat was sometimes suspended over the pot of sap in such a way that when the sap boiled up it came in contact with the twigs or fat and this had the effect of making the sap or syrup go down again.

There was generally great excitement among the Indian children when the first pot of syrup was ready to sugar off, as they were all sugar hungry, perhaps not having eaten any all winter.

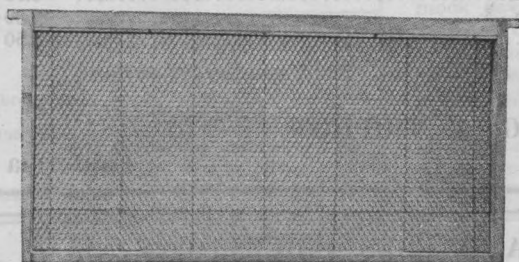
The Indian women when they thought syrup dense enough for sugar, used to drop a little of the syrup on some snow or on some fine ashes, then they rolled this between the fingers and if it sugared readily it was ready for sugar, the pot of syrup was then taken off the fire and allowed to cool a little, then it was stirred until it began to get thick and creamy, when it was poured into the birch bark moulds.

The sugar made from the first flow of sap is brighter, more sugary and more delicately flavored than the syrup that is obtained toward the end of the flow, late flow sap does not sugar so readily and makes a darker syrup more like molasses.

On our cheap lands in the West, when so many farms need shelter belts, would it not be a good idea for those wanting shelter belts to plant one or even two acres of trees, many of them maples? and then some of the rising generation could make maple sugar and syrup at home. It would be great fun for the boys and girls anyway, even if the older people did not think it worth while.

The cheapest way to get maple trees on the farm is to raise them, and anyone who can raise a row of radishes can raise maples by the hundred. Here is one way:

Procure from a seedsman, or pick from the trees if there are some near you, about a pound of seeds, sow these maple seeds in the garden in a row, putting them in about an inch apart and about an inch deep. The object of sowing them so closely is to save space and to make less ground to keep clean. When they come up keep them free from all weeds, and in the fall they will



Dadant's Wired Foundation In Solid Bottombar Frames

Wired Foundation is made for either split or solid bottombar frames. In the latter, one cross wire, embedded at the base, as shown above, holds the foundation in the centre. Many Wired Foundation enthusiasts use it this way. Try it. The improvement in your combs will satisfy you.

DADANT & SONS :: **Hamilton, Ill.**

Makers of Dadant's Famous Foundations—Wired—Plain—Surplus

ANDREWS & SON, Cor. Portage and Victor, Winnipeg, Man. Agents for Manitoba

be little trees from a foot to eighteen inches high.

Lift the little trees in the fall, tie them up in bundles, and lay them in a short trench, leaving only a few inches above the ground. This should be in some shady place so as to retard the growth in the spring until you are ready to plant them again, but do not put them where the chickens can get them, as they are fond of the buds and they will strip them all off. If your ground is all ready and well cultivated, those little trees can now be planted where they are to remain, but it is a better plan to plant them for another season in garden rows. The little trees should be planted in garden rows a foot apart and kept clear of weeds during the summer, and by fall they will be from three to five feet tall. Then the following spring they can be set out where they are to remain for life.

In a very few years the maples will be ready to provide syrup and sugar as well as shelter, and they will be things of beauty and joy for a lifetime, if not for ever.

USES OF COMB FOUNDATION

(Continued from Page 231)

of the frame will be filled with drone comb.

Spring is the best time to fix up the old combs. Cut out all that are crooked. It will be better also to melt up the very old black ones after they become heavy, and fill the frames with new sheets of foundation. Some beekeepers cut out the drone comb and piece in comb foundation.

Mr. Smith suggested another way at our convention. He thought a good way to deal with them was to place these combs from which patches of drone had been cut in the nucleus colonies as these would fill them in with workers every time. Combs not in use should be shut up in hives and all insects and rodents kept out. Bee moths seldom bother in this province, but the larder, or bread beetle, loves to lay its eggs in the unused combs, and its larvae will injure them to a certain extent, so that it is well to keep the supers covered.

All frames containing sheets of foundation on which the bees have stopped work after the honey flow, should be removed from the hives, also comb honey supers containing only sheets of foundation, as the bees will amuse themselves biting off the base of the cells and leave the wax so smooth that they cannot work it next season. When giving extra combs and frames containing only foundation, the combs should be placed on the outside as it is seldom that the bees make a good job on the frames next to the boards. It is too cool for them to do good work, so that you will assist them considerably by placing the combs on the outside.

We are continually receiving inquiries regarding wired foundation and can only say that we get many reports from beekeepers that are delighted with it, and we receive no complaints. Whether you use wired or plain, be sure to have a sufficient supply for all probable needs. A few pounds kept over will not "eat any hay."

To Beekeepers and Supply Houses

THE WESTERN GARDENER AND BEEKEEPER has a plant fully equipped to take care of all classes of Printing in connection with the industries growing around that of Beekeeping, from the simple corner printed on an envelope to the Catalogue of the largest manufacturer of Supplies.

Send Us Your Printing Enquiries

THE WESTERN GARDENER AND BEEKEEPER
171 McDermot Ave., WINNIPEG

LET'S GO!

When your colonies are on their summer stands, is the time to anticipate your requirements and place order. YOU are the loser if you wait until the honey flow is on before getting extra supers, etc., ready to put on your hives. Our stocks are complete with beekeeping equipment that SATISFY. Don't experiment, it's costly. Catalogue and instruction book combined sent free on request.

ANDREWS & SON

MANUFACTURERS AND IMPORTERS

Cor. Victor & Portage

Ph. B 830

WINNIPEG, MAN.

"We do not handle Ontario Honey"

You
Will Be
in a
Hurry



When the Bees are Swarming

NOW

IS the time to order those Hives and Frames and Comb Foundation, and to have that beeswax made up by the new "Airco" process into deep cell foundation, so you can have everything ready for such an emergency. Don't forget that we told you so.

Prompt service now and Everything First Class.

RUDDY MFG. CO., LIMITED

BRANTFORD,

ONTARIO

or from STEELE BRIGGS SEED CO., LTD., Winnipeg—Regina.

"GOLDEN OR THREE BANDED QUEENS"

Untested Queens—\$1.00 each, 12 for \$10.00, or 100 for \$75.00.
Selected Untested Queens—\$1.20 each, 12 for \$11.00, or 100 for \$85.00.
Tested Queens—\$1.50 each, 12 for \$17.00.
Good Breeders for \$5.00 to \$25.00 each.
Our Golden Queens Are Reared Five (5) Miles from Other Breeding Yards.

The Citronelle Apiaries
Citronelle, Alabama

THE BEE WORLD

The leading bee-journal in Britain, and the only international bee review in existence. It is read, re-read and treasured. Will it not appeal to you? Specimen copy free from the publishers: The Apis Club, Benson, Oxon, England. Send us a post card to-day. It is well worth your little trouble.

BUY B. C. BEES

Save on Express Charges

Our Specialty—2 Frame Nuclei with 1924 Queen. Pure Italians. May delivery, \$6.00 each. Full colony in standard hive, \$16.00. Full colony in shipping case, \$14.00. Place your order NOW to ensure delivery.
LINDEN APIARIES - Kelowna, B.C.

LOOK!

When you use JONES WEED PROCESS we guarantee perfect combs, all worker cells with the minimum of drone comb.

JONES WEED PROCESS absolutely will not stretch when properly used.

Made only from the purest bees-wax, JONES WEED PROCESS is manufactured with the utmost care and will stand every test. We will manufacture your wax by the same process—ship it along.

Look for this Trade Mark
When you buy Comb
Foundation



Have you received our catalogue No. 42? We will gladly send you a copy, OR send us a list of your requirements and we will quote prices and SPECIAL WESTERN FREIGHT ALLOWANCE.

WANTED—Good live agents to sell Bee Keepers' Supplies. In writing state how many beekeepers there are in your district.

F. W. Jones & Son

Largest Exclusive Manufacturers of Bee-keepers' Supplies and Breeders of Italian Bees in Canada.

Bedford - Quebec

HOW TO START AN APIARY

(Continued from Page 235)

if the weather is very warm will be gratefully received, the water can be gently splashed over the screen a short time before removing the cover.

In the case of nuclei or package bees, full and clear instructions for changing them to a hive should accompany the shipment, and with the latter a small amount of syrup made by mixing equal parts of granulated sugar and water, heating till the sugar is dissolved may be fed—use only the best sugar. A handy feeder is made by using a small honey pail after perforating the lid like a salt shaker. This should be inserted in a space in the hive from which the frames have been removed and elevated on two small blocks so that the bees may get under to feed from the holes in the tin. If it is necessary to feed a full hive, place the can over the frames inside a super. Feeding should be done cautiously and if the weather is warm and the pollen and flowers plentiful, it is well not to feed except for a day or two after the shipment arrives. Usually at the end of May, even this is not necessary.

A Protected Location

Just a word about the location of your colony or apiary—Do not worry about shade but protect from the heavy prevailing winds, place the hives on blocks, behind a bluff or a fence. Safety from the mauling of cattle is necessary for the sake of both bees and cattle. It is usually wise to have a view of the colony from the house, particularly in the swarming season.

In handling bees a novice should be equipped with a smoker, veil and gloves, for although the stings do not usually cause trouble it is well to be-

come gradually accustomed to them. A little smoke from the patent smoker, blown in the entrance and under the lid will make the handling easy, but a little smoke is enough, and soon you will get accustomed to the hive. Note—That speaks for safety to the handler.

The anatomy and some other essential points will be taken up at a later date.

SOME BEEKEEPING RECORDS

(Continued from Page 237)

with bees in one hive, and four in the other. At the same examination the number of frames covered with bees in the colonies wintered outside were six, three, eight, seven and six respectively. The weak condition of the colonies wintered in the cellar as compared with the stronger condition agrees with our previous experience that wintering outside is more satisfactory than wintering in the cellar.—Lemberg Star. Professor Fairfield, Superintendent of the Dominion Experiment Farm, Lethbridge, Alberta.

WINNIPEG BEEKEEPERS

The feature of the April meeting of the Winnipeg and Suburban Beekeepers Association was a talk on "The Anatomy of a Honey Bee," by Dr. F. A. Smith, a former president. There was, as usual, a part of the programme devoted to beginners. R. J. Smith described how to hive a package of bees. The provincial apiarist, L. T. Floyd, was also present, and spoke on some experiences he had amongst bees last winter.

THREE BANDED ITALIAN QUEENS

My Bees hold the Indiana record for comb honey average per colony in a run of 10 years
Selected Untested Queens, \$2.00 each for delivery May 30 and after.
20% books orders. Breeders, \$10.00.

Satisfaction Guaranteed.

Booklet on Request.

CHARLES KENNARD

Knightstown, Ind

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U. S. A.

Bees

We shall receive between May 5th and 10th 2,000 Packages in solid express car. We guarantee every package in perfect condition, these prices are F.O.B. Winnipeg, all packages contain liquid food and queens in each Package.

2-LB. PACKAGES

2-lb. packages and queens, single package	\$5.00
2-lb. packages and queens, in lots of 10.....	4.85
2-lb. packages and queens, in lots of 25.....	4.75
2-lb. packages and queens, in lots of 50.....	4.50
2-lb. packages and queens, in lots of 100.....	4.25

FULL COLONIES

Full colonies, single	\$15.00 each
Full colonies, in lots of 10.....	13.00 each

Prices for April f.o.b. Winnipeg Cash With Order.

Discount 5 Per Cent.

R. J. SMITH

P.O. Box 1326

Winnipeg

EATON'S FOR BEE-KEEPERS' SUPPLIES

Specially Designed **"Western Prairie Flower"** Lithographed Honey Pail



This lithographed honey pail is, we believe, the most correct and attractive pail being offered today. It is designed to advertise and market Western Honey, and was adopted as the official container at the Manitoba Beekeepers' Convention.

Our Prices on these Pails include Corrugated Cardboard Cases, sufficiently strong to be repeatedly used as Shipping Cases. The cases are made to fit a certain number of pails (as listed), and this enables you to ship honey in uniform dustproof cases, ensuring that your honey will reach market in a most acceptable form.

44F-100—24, 2½-lb. pails in corrugated shipping case. Price, Complete, \$2.15
 44F-101—12, 5-lb. pails, in corrugated shipping case. Price, Complete, 1.70
 44F-102—6, 10-lb. pails, in corrugated shipping cases. Price, Complete, 1.35

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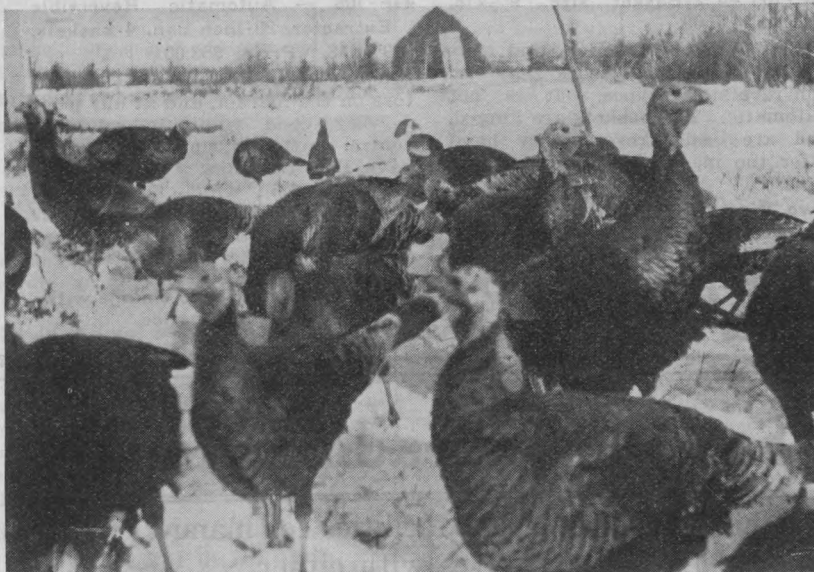
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Avoiding Trouble With Young Turkeys



Mammoth Bronze Turkeys Passing the Winter at Longacre Poultry Farm, Property of Mrs. W. Dumbrill, Charleswood, Man.

Turkey raising has been discouraging to some people, because of disease. On the prairies of Western Canada, however, farmers have very little trouble in keeping their turkeys healthy. If turkeys are kept in perfectly clean surroundings there is not much danger of disease. A place cannot be kept clean if it is constantly damp, and dampness is in itself something that is not good for this class of livestock. The weather being generally dry out here, practically the only time when rains are a worry is when the poults are less than two weeks old. Some people prefer to keep them by a shelter until they are 10 days or two weeks old, although some find that the mother hen always takes good care of her young and will raise 90 per cent. of them, while roaming around at liberty.

To keep them confined while young, a good plan is to give them a coop in a quiet spot, with a yard about six feet by four feet to run in. This is for a brood of about a dozen with their mother. A fence one foot high will

keep the young poults in the yard, while the old hen can jump out for exercise whenever she wants. She will not go away so long as the young ones cannot follow her, and she will take care of them. In a few days they get strong enough to roam around wherever their mother will take them and spend the night in the open.

The first feed after hatching is the same as for chickens, and is not given until about two days have elapsed—sand, egg and bread crumbs. The poults may not like bread very well, but they all like rolled oats, which is as good as anything for them to eat. Green stuff is very important for them from the start, chopped up onion tops being very good. Bran, sour milk and curds are fed with good results. Turkeys generally pick up a large part of their diet by themselves, in the form of bugs and weeds. They like wheat when they are old enough to eat it.

Lice must be guarded against, as they may sometimes cause death to

young turkeys. Lice get into the ears and cause the birds to take fits. Prevention is by keeping the mother hen free from lice and putting a little lard on the heads of the young ones, and under their wings.

Crows are a dreaded foe, not only because they snatch up some poults, but also because they may carry the disease known as blackhead, spreading it with their droppings wherever they fly. Above all, disease must be prevented. A few drops of fluid sheep dip in the drinking water will turn away a lot of disease. Cleanliness is most important, especially on limited ground, and turkey raising should not be attempted in a place where there has been any poultry disease, unless it is thoroughly cleaned up.

The breeding stock should be of the right color, as described in the Standard of Perfection, and should come up to the standard weights. The heavier the birds the better for all purposes.

Inbreeding must be avoided, in order to keep vigor in the stock. If the hens are kept from year to year, the gobblers should be changed every year. Old hens mated with young gobblers make the most satisfactory combination. Old gobblers are sometimes ugly with the small poults and chickens.

One gobbler is sufficient for about 10 females, and all the eggs laid by a turkey hen before she gets broody will be fertile after one mating with the gobbler. Sometimes two farmers have only one gobbler between them, because after he has been mated with turkey hens on one farm for a few days he can be taken to the other farm.

The period of incubation for turkeys is 28 days. A chicken hen can cover from 7 to 10 turkey eggs, but a turkey hen may be given 15 eggs or more for a setting.

When turkeys get a good start in life and have free range they will easily take care of themselves throughout the summer.

Good Class of Birds Bred in Manitoba

Report of President Manitoba Poultry Breeders' Association for 1923-24

PROF. M. C. HERNER

The past year has again been evidence of an increasing interest in poultry keeping, both among our farming communities, and also among the urban dwellers. The farmers seem to be especially keen for help and advice on this part of their farm work. The reason probably lies in the fact that many farmers have found out that poultry is probably just as sure a crop as anything else, and that the returns for the money invested are greater than for anything else, and the risk of getting the returns probably a good deal less. On many farms the returns from their flock of poultry is what kept the farmers "on their feet" and on hundreds of farms the returns from eggs and poultry are keeping the family in groceries and clothes. Then, again, on many other farms the owners counted more on their poultry crop this year than their grain crop. All these things indicate that the great mass of people who are producing 95 per cent. of the eggs and poultry which are marketed each year are keenly alive to what the future possibilities are of the farm flock. As a consequence almost every farmer today wants to know how to cull his flock, and how to feed to get winter eggs. He wants to get into better stock and is ready to spend a little more time on his poultry than in days gone by.

The past year has demonstrated again that Manitoba breeders can breed and raise good stock—birds that are good enough to win anywhere. The class of birds shown at St. James, Portage la Prairie, Swan River, Dauphin and Neepawa, as the smaller shows, and at Winnipeg as one of the larger shows, and now at Brandon, is an indication that our breeders are able to produce the goods. Your president had the honor of judging three of these shows, and it was a real pleasure to handle some of the birds bred right here in Manitoba.

The regrettable fact is that there is such a small attendance of visitors at the shows in the towns. Neepawa adopted at their last show what is probably a new departure when they charged no admission, and in addition, put on a special lecture. These two features combined certainly brought out a very good attendance, and the association felt they were doing a piece of real good work through it.

Your president had the opportunity to attend the meeting of the National Poultry Records Association, held at Ottawa last season, when registration of poultry on the basis of record of performance was finally passed and approved, thus bringing the work of poultry breeders prominently before the poultry breeders of the United States and other countries. Canada is the first to place its official seal on the registration of poultry. Manitoba is rapidly coming to the front as a poultry growing province. The last few years has seen a great increase in turkey production with 30 carloads being shipped out this year to eastern markets, where they are in strong de-

mand. What we did in turkeys, we can do in chickens, ducks and geese.

The prices for eggs this year have been very good, but the quality during the summer months will stand an immense amount of improvement. Market poultry prices have been very good, especially for chickens, which were slightly lighter crop than a year ago. Turkey prices suffered a drop as compared with those of a year ago, and yet farmers say they pay well even at this year's prices.

During the summer, the new egg regulations were enforced with the result that general dissatisfaction prevailed today among the farmers, due to the fact, that these have worked out to their detriment rather than to their good. Consumers, on the other hand, have benefited by it since they now can buy eggs on a quality basis and prices are graded accordingly.

The past year has seen a heavy increase in the importation of baby chicks, and also a number of unsuccessful attempts to start local hatchery work on a large scale. The fact that baby chicks can be produced at a reasonable price has been quite a stimulus to the rearing of poultry and to the baby chick business in particular. In many cases we would like to see chicks of higher standard qualities brought in, but as the business develops, steps can be taken to insure a corresponding improvement in quality. Along with this, we hope to see local hatchery work on a larger scale within the next few years.

In respect to Manitoba Poultry Breeders' Act, we have to inform you that the usual grant of sixty per cent. of the prize money to all affiliated associations will be reduced to fifty per cent. by the proposed change of the act, but even at that, our grant will be as high as that in any of the other provinces.

Your president attended the Inter-Provincial Marketing Interests held at Regina in February, where representatives of the three Prairie Provinces discussed the present system of marketing poultry. Such questions as organization, financing, methods of packing, pooling, etc., were fully discussed.

Your president has been requested to act as a director on the Board of the American Poultry Association, representing the Western provinces.

During the month of May and the early part of June, two livestock improvement trains were operated in the province—one on the C.P.R. and one on the C.N.R. Poultry work was given an important place in the programme on both trains, and the farmers and their wives took a very keen interest in this work.

Early in June an addition was made to the Poultry Department staff of the College, when Mr. F. B. Hutt, a graduate of Ontario Agricultural College, was appointed lecturer. His duties will be very largely extension work, and in this capacity he will be available for

any work with the poultry breeders of the province.

We have given a brief review of the poultry conditions during the past year, and we feel that every breeder is vitally interested in what this may mean to him personally, and to the poultry business as a whole. As president, we have left many things undone that should have been done and could have done only for lack of time. We have had the best interests of the poultry breeders at heart anyway, and as we have stated on many occasions, they have given us the wonderful and highly perfected assortment of breeds and varieties that we have to work with today—everyone of which has something good about it, and many of them a whole basketful of good things which are the result of years of experience and skill. We feel sorry that there should be those who would belittle this work and try to divorce our farmer poultry keepers' interests from those of the standard bred breeder; the two are one. Eggs are not the whole thing—we want market poultry and we want standard-bred birds—all three in one. We can not get this unless we work for it. The great mass of farmer poultry keepers will invariably pick the better bird, if they see it alongside the one of inferior standard breeding, and it is quite possible to get as good egg production in the first as in the last. So as breeders let us make the 1924 season one of progress for the common good of all.

Increased Interest In Registration of Poultry

The number of breeders who are entering birds in the Canadian Egg Laying Contests conducted by the Dominion Experimental Farms, in order to secure registration, is increasing each year.

In the contests of 1921-22 there were 59 Canadian breeders who had birds qualify for registration. The total number of birds that qualified in that year was 217. In the 1922-23 contests, 126 breeders qualified, a total of 577 birds. This spring there is a total of 794 registered females (not counting those that may have died in the meantime) that will be mated.

From the offspring of the 217 females that qualified in the first year about 250 pullets have been entered in the 1923-24 contest now underway. These pullets are known as second generation birds. It is from these pullets the offspring of the registered dams, providing they qualify in turn, that the first cockerels eligible for registration will be raised, and it is to have as large a number of these cockerels as possible that breeders are anxious to enter their birds in the contests.

How Poultry is Registered

For the past two years females from Canadian Egg Laying Contests have been registered, and now some of these birds are being mated for their second

breeding season. When the pullets from these matings qualify in next year's laying contests, and are bred to approved males, the cockerels from these matings, if suitable individuals, will be eligible for registration.

A female that is typical of the breed and has no standard disqualifications, that lays 200 or more eggs which average 2 ozs. each in the contest year qualifies for registration. It will be noted then that any female that can herself qualify is eligible for registration, but when it comes to the registration of the males this is much more difficult. With the males it is a question of pedigree. In order to have a cockerel registered the qualifications are that his dam and his grand dam must each be registered, and for the first few years his sire and his grand sire must each be approved. After 1927 the sire and grand sire must also be registered. In addition to this the individual cockerel must pass a rigorous examination for stamina, type and standard qualifications. It will be seen, therefore, that a registered cockerel must be more than the offspring of a good mother; he must have in his veins the combined blood of at least two generations of registered, and good (and later registered) sires.

This gives the registered cockerel qualifications that make him extremely valuable as a breeder.—F. C. Elford, Dominion Poultry Husbandman.

NOTES ON BRANDON SHOW

Richard Oke, Judge

The poultry exhibit at the Manitoba Provincial Exhibition, held March 3rd to 7th, was much larger than last year, and the quality all through the more popular breeds was of high merit. Before giving you a short write-up on the principal varieties I would call attention to the fact that the floor space allotted to the poultry is entirely too limited, aisles too narrow and the lighting arrangements could be greatly improved, as at present the light available is from windows along one side and end only, which makes the judging slow, as too much time is taken up carrying the fowls from the opposite side to the light, which is unsatisfactory in judging where the competition is keen. Barred Plymouth Rocks was a real good class throughout the several sections, the winners having good size and conformation of body with nice even spaced barring of about the right shades of color. White Rocks not as numerous, but good quality. White Wyandottes was the largest class in the show. 1st cock, neat head points, round full breast, good width over back, carried out to a well spread tail, shown in nice fit and feather, other winners fairly close up and not much between them, the winning hens were a good, even, typical lot, shown in nice fit, some of them being a bit loose in feather. 1st winning cockerel stood out, nice conformation of body and pure white, balance of winners all good, useful specimens. 1st pullet the gem of the class, neat comb, rich red eye, round full breast, good width of body carried well out to tail, which was well spread, nice smooth texture of feather and pure in color, just hard to fault in any section. Balance of winners real good quality all through. Winning pens also stood out in type and pureness of color. Silver Laced Wyandottes, although not as numerous, the winners in old stock especially were good in type and color with nice even clean cut lacing, rich in their black. Other varieties of Wyandottes not so numerous, but the quality was about on a par with those seen at most of our shows. S.C.R.I. Reds, quite a strong class. Unfortunately they were mostly cooped in a dark part of the building, where they could not be seen to advantage, nevertheless they handled well, the winning males being uniform in top color, which carried well down. The winning cockerels had nice length of body, which was well balanced, shown in nice feather and condition, most of them a bit heavy in comb. Winning pullets, a nice lot all through, with good body formation and rich even color, just hard to separate. Rose comb not so numerous, but good average quality. Orpingtons, although the classes were not overly large, quality made up for what

they lacked in number, especially in Buff and Black, good width and depth of body. Whites, nice type, might be a little purer in color. Speckled Sussex, 1st cock stood out for size and type of body, nicely ticked neck and saddle, just a bit dark on ground color, balance of class fair. Asiatic, Light Brahmas, a real quality class, winners having good size and length of body. Nicely laced necks and tail coverts, rich in their black and clean in their white. Dark Brahmas, not so numerous, but good average quality, females being fairly well pencilled. Black Langshans was another class strong in number and of good quality, well shown. Mediterranean, Leghorns in all colors, single and rose comb, were fairly big classes all through, and the leading winners would compare favorably with those shown at our Eastern shows. Minorcas also had size and color and made a real good showing. Anconas, quite a big class, but outside a limited few, did not measure up to quality shown in the East, white tipping being too heavy and irregular. Turkeys, especially in bronze, made a splendid showing, having size and grand color. Water fowl, small classes all through, nothing outstanding.

POULTRY POINTERS FOR THE MONTH OF MAY

H. C. GRANT,

Manitoba Agricultural College.

- (1) Hatch early. Now is the time the early fall fair winners are starting to scratch.
- (2) The first few weeks means everything. Remember, every stunted chick is a scrub.
- (3) Such preventable causes as improper ventilation, dampness, overcrowding, and filthy litter cause roup. So do not blame it on the chicks.
- (4) Chicks on dry feed need plenty to drink. Small easily clogged dishes are of little use. Dry feed heats in the digestive system and unless the chicks can get lots of water they go "crazy." The head is drawn back and they go round and round, finally falling over. Once more do not blame it on the chick.
- (5) If you are raising chicks with a broody hen, keep the mother bird confined in a brooder coup. One short outing a day is enough.
- (6) The best medicine for early chicks is sunshine. Brood coops should be high and dry and face south.
- (7) Have you dug up the runs and cleaned around the hen house yet?

SANITATION AND FEEDING IN THE SUMMER

If you have not already done it, you should get busy now, before the weather gets too hot, to give the chicken house a thorough cleaning, fill up all the cracks in the walls with plaster or mud, and whitewash everything. This is one of the suggestions made by H. C. Grant, of the Manitoba Agricultural College, addressing the Winnipeg Poultry Association at their final meeting for the year. One must do something to guard against red mites and other insects which prey upon chickens, and this method of attack is generally used with good results. Then if the floor is just earth, it should be heavily limed, and spaded to a depth of 8 or 10 inches. If the earth has not been changed for two years or more, about 4 inches should be removed from the top, and replaced by fresh new soil. It is very important to keep the floor fresh and clean, because practically all infection of poultry goes through the droppings.

Out in the yards, too, it is important to keep the earth fresh by spreading lime and by spading or ploughing. Oats and grass seed should be sown on the ground when it is ploughed up, if there is any chance for it to grow. Even when the ground is thickly covered with chickens, so that there is no chance for a crop to grow on it, if some oats are sown, they will probably sprout sometime and provide a little green feed.

In most back yards where chickens are kept there is too little green stuff, and no ration is complete without some succulent grass or vegetables. Lettuce is a good feed for chickens and is generally easy to get in the summer.

In addition to green feed, Mr. Grant said, protein must be provided. Bugs are not generally plentiful enough to enable the chickens to get as much protein as they need. Grain has not much protein in it. Meat scraps, buttermilk and tankage are some of the feeds which contain the highest percentage of protein. In the winter per-

(Continued on Page 248)

ESTIMATE OF FARM POULTRY IN CANADA

Compiled for the Western Poultryman by the W. Sanford Evans Statistical Service—Number and Value According to Statistics for 31st December

MANITOBA						
	Turkeys	Geese	Ducks	Other Fowls	Total	Value
1923 . .	200,118	58,836	70,876	2,959,221	3,289,051	\$2,250,400
1922 . .	210,709	73,833	76,576	3,250,990	3,012,108	2,945,000
1921 . .	172,830	72,847	61,015	3,449,598	3,756,290	3,475,500
SASKATCHEWAN						
1923 . .	675,303	148,208	281,373	7,996,868	9,101,752	\$6,192,500
1922 . .	419,063	121,530	210,255	7,705,102	8,455,950	6,250,000
1921 . .	255,923	109,365	136,933	9,051,788	9,554,009	7,462,000
ALBERTA						
1923 . .	580,510	93,638	98,455	5,857,560	6,630,163	\$4,189,300
1923 . .	337,336	89,724	86,536	4,908,543	5,422,139	3,981,200
1921 . .	283,346	83,363	62,814	4,534,042	4,963,565	4,251,500
TOTAL PRAIRIE PROVINCES						
1923 . .	1,455,931	300,682	450,704	16,813,649	19,020,966	\$12,632,200
1922 . .	967,108	285,087	373,367	15,864,635	17,490,197	13,176,200
1921 . .	712,099	265,575	260,762	17,035,428	18,273,864	15,189,600
TOTAL CANADA						
1923 . .	2,105,483	961,203	1,046,487	41,356,119	45,469,292	\$39,840,300
1922 . .	1,590,281	947,269	958,139	39,434,873	42,930,562	41,195,300
1921 . .	1,199,494	883,690	762,135	34,340,474	37,185,793	38,015,100

QUESTIONS and ANSWERS

The Editor kindly invites all readers of the WESTERN POULTRYMAN to write for advice in matters pertaining to poultry. This will be given most willingly through these pages. All questions received not later than the 15th of the month will be answered in the following issue.

Address all enquiries to The Editor, THE WESTERN POULTRYMAN, 171 McDermot Ave., Winnipeg.

L. C. B., Moose Jaw, Q.—I have quite a few deaths in my flock of hens this year, apparently caused by the same disease. The symptoms are as follows: The head gets pale or white. Becomes emaciated. Partly loses control of her legs. Has a diarrhoea, the feathers around the vent being rather black.

A.—The symptoms are those of worms in the hens, except that there is not always diarrhoea. Intestinal worms sometimes bring on the death of birds which were naturally robust and vigorous. You should carefully examine the droppings, because if worms are the trouble, you should be able to find some of them there. A good dose to give in case of worms is tobacco. The birds should be kept fasting all night and morning, and given the dose about noon. Finely cut tobacco stems at the rate of one pound for 100 birds are steeped for two hours in hot water and then mixed with as much wet mash as the birds can clean up in about one hour. They should then be fed nothing else and given no water to drink until about an hour before dark. Then they should be given epsom salts in the drinking water at the rate of 1½ pounds for 100 birds. The droppings should be collected frequently and burned.

H. A. C., Winnipeg, Q.—Sour bread dough can be fed to chickens with fatal results. Instead of throwing it into the garbage my wife gave it to the chickens. They became very sick with diarrhoea, and some of them vomited. The two roosters died, and one of the hens got suffering so much that I took mercy on her. Next morning I gave the flock a dose of epsom salts, and except for the three mentioned above, they recovered, and are now as healthy as ever. What should I have done?

A.—Giving epsom salts to your flock was the right thing to do. In individual bad cases you might have given a dose of castor oil, one-half teaspoonful to each bird. Care should be taken when there is diarrhoea to keep the litter on the floor clean.

W. A. B., Toronto, Ont., Q.—I want to ask your advice about a trouble I have noticed in my hens. A couple of my Leghorns apparently have a cold in the head, as near as I can explain the matter.

A.—The best way to treat a trouble of this kind is to give a dose of Epsom salts, and make sure that the birds are kept in a place where there is not too much dampness and where there are no drafts. The best way, I think, of giving Epsom salts is to put it in the drinking water at the rate of one pound to one hundred hens, so they will take it first thing in the morning when they

AIR, ROOM AND EXERCISE VITAL TO BROODER CHICKS

The artificial method of brooding chickens consists in supplying, artificially, heat as nearly as possible like that furnished by the hen under natural conditions. The temperature of a hen is about 106° F., but as hens seldom sit closely on chickens the latter do not receive this degree of heat. Hens adapt their methods of brooding to conditions, such as outside temperature, size of the chickens, and wet weather, and the operator of an artificial brooder must meet these conditions as nearly as he can. Some of the most important faults in the management of brooders are overcrowding and lack of ventilation and the failure of chickens to get sufficient exercise. The brooder should supply the proper temperature, be readily adapted to meet the changes in weather conditions, be easy to clean, and be well ventilated.



Hatched in March by J. Lacey, Winnipeg, and Photographed When It Was Just 24 Hours Old.

come off the roosts. As you do not give any more particulars about the symptoms you have noticed in your birds, it is impossible for me to give you any more definite advice. However, a good rule with poultry is that, if you can cure them from sickness by means of Epsom salts, all right—otherwise use the hatchet. There are cases, of course, when more pains should be taken, but not unless the affected birds are very valuable. In any cases of an ordinary cold in the head Epsom salts should work a cure.

It would be wise if only a few of your birds appear to be sick, to keep them separate from the other birds, to avoid contagion.

RABBIT BREEDERS

A fair sized article concerning the rabbit industry and all the news on the subject is to be written for us from month to month by the Crow's Nest Fur Rabbitry of Lethbridge, Alberta. Information in the form of answers to questions will be published also. If you wish to ask anything about the breeding and rearing of rabbits, please send your questions to the editor of the Western Poultryman.

Chickens are usually left in the incubator from 24 to 36 hours after hatching, without feeding, before they are removed to the brooder, which should have been in operation for three or four days at the proper temperature for receiving chickens. A beginner, says the United States Department of Agriculture, should try this brooding system carefully before he uses it. After being placed in the brooder the chickens can be given feed and water. Subsequent loss in chickens is frequently due to chilling received while taking them from the incubator to the brooder. In cool or cold weather they should be moved in a covered basket or other receptacle.

Brooder houses should have from ½ to 2 inches of sand, dry dirt, cut clover, or chaff spread over the floor and in the brooder pen. The hovers should be cleaned frequently, as cleanliness is essential in raising chickens successfully.

When chickens are first put into the brooder they should be confined under or around the hover by placing a board or wire frame a few inches outside. The fence or guard should be moved farther and farther away from the hover and discarded entirely when the chickens are 3 or 4 days old or when they have learned to return to the source of the heat. Young chickens should be closely watched to see that they do not huddle or get chilled. They should be allowed to run on the ground whenever the weather is favorable, as they do much better than when kept continuously on cement or board floors.

TO GET BETTER CHICKS AND MORE OF THEM

J. LACEY

The reason I have taken up this subject is, that there is such a great demand the world over for better eggs and better chickens. Baby chicks are being produced, sold and shipped by the millions at the present time, but I must first refer to the first incubator and brooder that we know of, which is the mother hen. We all have to go to nature for our reference. The mother hen does her work well, but in such a miniature manner, that she cannot supply the demand. So we are bound to resort to artificial means. I claim that artificial means of incubation produces better chicks and more of them for this reason: We find by careful examination that when chicks are hatched by the broody hen there is a microbic germ, which the chick brings into the world with it. If allowed to develop with the growth of the chick, it causes the poultryman lots of trouble. The moisture, heat and fat that are on the body of the hen feed these germs, so they breed by the thousands.

I claim that chicks hatched in an incubator and raised under a brooder, free themselves from this, because the artificial heat over the heads of the chicks absolutely dries up the germ. And so we get better chicks and more of them.

Further material on this subject will be given next month.

Successful Management of Geese

R. A. MEEKS, Manville, Alberta.

There is at the present time a considerable and, I believe, a growing interest in the subject of geese raising. Probably the foremost reasons for this interest are the prices which have prevailed during the past few years. In addition to that, however, many persons are attracted to the goose on account of those qualities of size, beauty, the easiness with which they are raised, and their freedom from disease which cause such heavy losses in chickens and turkeys.

Geese raising is practised over a widespread territory in the West, but are raised in far greater numbers in Eastern Canada and the United States, but the fowls are raised in comparatively small flocks and by no means on every farm. For this reason while the industry is widespread it is not large compared with the chicken industry. I feel perfectly safe in saying that there are thousands more raised in Western Canada during the past few years than the years before the Great War.

The greatest opportunity for geese raising undoubtedly lies along the line of a small flock kept as a side-line on the general farm. Under these conditions where the birds are allowed to range on good grass pasture after they are three weeks old they pick up a large percentage of their food and the birds which are mature for market constitutes a by-product of the farm produced at a small cost.

Very little money is invested of any kind, and with the good prices which have prevailed during the last three years an excellent profit has been realized by those who engaged in geese raising.

It is rather rare to find geese kept in larger numbers than six females on the Western farms. Of course on exclusive poultry farms geese are kept in flocks of one hundred or more.

As with all other classes of live-stock and poultry there is an opportunity to engage in geese raising as a breeding business. From the fact that inbreeding is being discontinued and the desire of the breeder to constantly improve his breeding birds there is an ever increasing demand for ganders and hatching eggs. With goose eggs bringing forty cents each and breeding stock four dollars up, it can be readily seen there is money to be made.

Geese raising is especially attractive to farm women owing to them requiring so little care and attention and the fact that the women's work keeps her near the place where the geese are raised she can easily look after them in her spare time.

There are several varieties of geese varying in size and color. They are: Buff geese, the largest of the goose family; the Toulouse next, the Embden next and several of the more ornamental type of geese, such as the Chinese and African breeds. The Toulouse geese are the most popular in the West, with the Embden in second

place. Of course a great many geese on the Western farms are of no particular breed, resulting from crossing in the past.

In making a start in geese raising only the keeping of a purebred stock should be considered. This is because purebred stock will run larger in size and will prove to be so much more attractive that there will be greater opportunity for sales of breeding stock. In selecting breeding stock for purchase one should be sure to select individuals which have vigor and strength to a most marked degree possible. Good size should likewise be selected, although it is not always wise to pick out the extremely large birds, as these may not prove to be quite such good breeders, and are also likely to be a little slow in maturing. It is usually best to start in the fall by purchasing one gander and two geese. This will give enough stock to get a good start without making too heavy an investment, and from this start the size of the flock can easily be built up as success warrants. It is best to purchase the breeding stock in the fall, as at that time there are a greater number of birds from which to make a selection. Purchasing at this time will also allow the birds to get thoroughly accustomed to their surroundings by the following spring when the breeding season opens. Of course, a start can also be made in the spring by purchasing eggs for hatching and setting them under a hen.

For the old geese there should be a shed which will keep off the snow and break the winds. The floor should be well covered with straw.

Feed a mixture of equal parts of wheat and oats and one-half part of barley. Keep grit before them all the time. Provide water in a dish deep enough so that they can wash out the air passages. Green feed should be fed, such as sprouted oats, mangels or cabbage.

For the nests place barrels or large boxes around in convenient places. Make the nest of hay or straw. It is best to keep the geese shut away from the henhouse as often the goose will make her nest in the henhouse and with the gander will take complete possession.

Gather the eggs morning, noon and night to prevent chilling and more often if the weather is extremely cold.

Geese usually begin to lay from the middle to the last of March. They lay both in the daytime and at night. Mark the date on the eggs. Place them in a basket lined with a dark cloth and covered with the same cloth. Keep the eggs in a place where they will not chill or get too warm. Turn them half over once or twice daily. It would be well to stand them on the small end once or twice a week instead of turning on the other side.

The majority of geese raisers set the eggs under hens. The number of eggs set must be regulated according

to the size of the hen. Some will cover as high as eight eggs, while others will only cover five. Pick out the oldest eggs. This can easily be done by the date marked on them. They should never be kept longer than two weeks, and the fresher they are the better they will hatch. The eggs will hatch sometime between the 28th and 30th day. As soon as the little ones can be heard in the shell the eggs should be placed in lukewarm water. Then pick out the eggs that have living goslings, dry them on a soft cloth, and put them back into the nest. The ones which have living goslings in them can be easily picked out as they will kick and move around in the water. Sometimes it is necessary to help the little ones out of the shell but do not tear the lining if it bleeds. Feed and water the setting hen regularly. Dust the hen and nest when set and again a week before the eggs are due to hatch with a good lice powder.

Set two hens or two geese at the same times and then all the gosling can be given to one another. Pick the feathers from the breast of the goose and give her only as many eggs as she can cover well. A goose will break more eggs than hens but in every other way they are superior. When setting goose eggs under the hen you must turn the eggs every day as they are too large for the hen to move about.

Geese will lay a second laying providing they are fastened away from their nest for a few days when they become broody.

For the food of young goslings bread and sweet milk or meal and sweet milk have no equal. Give this feed to them in shallow pans after they are twenty-four hours old. Have fresh water before them at all times in a dish three or four inches deep. A rock may be placed in the dish to keep them from upsetting or standing in it. Feed four times a day regularly. If the weather is too chilly to turn them out in a small pen on tender grass, cut small blocks of sod and place them in the boxes where the goslings are kept. They should have sand or fine grit before them at all times. They should not be turned out on free range until from ten to fourteen days old.

A moistened mash of bran, shorts and barley chop may be fed after goslings are two weeks old. It is not necessary to feed heavily; it is better to feed lightly but regularly, at least, until they are feathered. They do not require much to eat besides tender green grass and all the water they can drink.

The young ones must be kept out of heavy rains until feathered. A light shower will not hurt them unless the weather is chilly. Above all things avoid letting the youngsters become chilled. An unused shed or well covered coop must be provided for housing at night and protection from heavy rains.

As soon as the young geese become fully feathered they may be picked. The feathers are ripe when they pull easily, and very few if any of them bleed. If left too long the feathers will tighten and be very hard to pick. Great care must be used at the first time of picking, as the young geese are very easily torn. In extremely hot weather, geese especially the young ones, should not be picked unless the pasture is good, water plentiful, and lots of shade. Shade is a necessity, as very hot sun will kill part of the flock unless they are protected from the very hot sun. Never pick geese during the breeding and mating season. At other times they may be picked about every seven weeks.

Feed a good fattening ration for about three weeks before marketing, such a ration being composed of equal parts of oat and barley chop, bran and shorts. Sell the geese for the Thanksgiving market, when they will dress from twelve to fifteen pounds. They would be a little larger at Christmas time, but the extra feed and labor would be worth more than the extra profit. Kill by dislocating the neck or bleeding through the mouth. Dip in boiling water and then dip in ice water. With this treatment the feathers and down will come off very easily and leave a much nicer bird than when dry picked. Let cool well before packing. Ship in clean boxes labelled with your name and address to a reliable firm. Place a memorandum inside the box stating number of birds and the weight.—Calgary Herald.

REGISTERED COCKERELS

Canada is setting the pace for the whole world to follow in the system adopted to obtain registered cockerels.

The bred-to-lay cockerel that can transmit to his pullets the ability to produce a large number of eggs is what all keepers of utility poultry are after. It is recognized that the quickest way to increase the average egg yield of any flock is through the male, and this fact is commercialized by many breeders of so-called bred-to-lay stock, who advertise high producing males that have not the breeding behind them, and are therefore unable to transmit this quality to their offspring.

Because of this fact dishonest breeders have foisted overrated stock upon the public, and one of the reasons why registered cockerels are wanted is to overcome this practice of selling inferior birds as good breeding stock.

At the present time it is possible for honest breeders to enter their pullets in the laying contests (of which there are 12 throughout the Dominion) and by having their birds qualify to produce cockerels that may be registered by the Canadian National Records.

The fact that a cockerel is registered is a guarantee to the public that he has a certified pedigree behind him, of at least two generations of 200 (or more) egg blood, and that he is himself a bird typical of the breed and without standard disqualifications. Such a bird grown in our Canadian climate means the very best procurable in breeding for high egg production.—Experimental Farms Note.

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Houdans, 1924—Moose Jaw, Cocks, 1st and 2nd. Pullets, 1st. Orloff Cock, 1st; Cockerel, 3rd; Pullets, 1st and 2nd. Houdans, Winnipeg, Cocks, 1st and 2nd. Pullet, 2nd.

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1924	Winnipeg	2	1	5	3 & 4	2
Winnings At	Saskatoon	1	1	1 & 3	1 & 5	1
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From my winners Winnipeg, Saskatoon and Yorkton. From pens 1 (Light and Dark), \$5 per 15. From pens 2 and 3, \$3 per 15.

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See My Winnings in this Issue.

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Manufactured by

THE WESTERN STONE CO., LTD., St. Boniface, Man.

SANITATION AND FEEDING IN SUMMER

(Continued from Page 244)

tein is necessary for the making of eggs. In the summer it is necessary for the same purpose with the hens, and it is necessary with the young stock for the making of growth and feathers.

Infertile or dead-germ incubator eggs are high in protein and make a suitable feed mixed with the dry mash. These should not be wasted. They may be boiled about half an hour, so that any disease germs in them will be destroyed. They should then be ground, shell and all, in a meat chopper and mixed with the dry mash at the rate of about 1 pound of egg to 4 pounds of grain, for the growing young chicks.

The scratch feed is also an important part of the summer feeding, and should be given in moderate quantities so that the chickens will be anxious to work for it. One common fault in the summer is that some hens get too fat. They should be given some incentive to work, such as scratching for grain under a little straw. Where they have free range on a farm, chickens will get plenty of exercise looking for something to eat, if they are given just a little less than enough to surfeit their appetites, but where they have no chance to find odd morsels by roaming around, feeds should be given them in such a way that they will have to work in order to get what is coming to them.

Frame's Baby Chicks

GIVE US GOOD TREATMENT

DON'T OVERHEAT US
DON'T CHILL US
DON'T CROWD US
DON'T FEED US TOO SOON
DON'T FEED US TOO MUCH
FIRST WEEK
DON'T FEED US MOLDY FOOD
DON'T LET US GET WET

GIVE US PLENTY OF SOUR MILK
GIVE US GOOD COOPS
KEEP OUR HOUSES CLEAN
KEEP US FREE FROM LICE
PROTECT US FROM RATS AND CATS

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RHODE ISLAND REDS ROSE COMB

Bred for High Egg Production, as Well as Exhibition

My latest winnings were ten prizes at Saskatoon Poultry Show, 1924, including 1st, 2nd and 3rd prizes in laying class.

Some choice breeding stock for sale. Eggs for hatching, \$2.50, \$4.00 and \$5.00 per setting.

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Pure Bred Egg Laying Strain.

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White Wyandottes and S.C. Anconas

Ancona Cockerels from Canada's Highest Official Hen in 1922, \$7.50 each. From 200 Egg Hens, \$5.00 each.

Wyandotte Cockerels, \$3 to \$5 each.
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Nothing bred from hens laying less than 160 eggs. No cockerels used from less than a 200-egg hen.

Fine cockerels this fall from high record hens and sires, \$10 to \$25.

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NOT BREAKING THE LAW

"Here!" cried the fish warden. "What are you doing? Don't you know you're not allowed to catch fish here?"

The angler, who had sat three hours without a nibble, turned and surveyed the official sourly. "I'm not catchin' 'em," he retorted peevishly; "I'm feedin' 'em."

SOME FEED

"I had a cow that would not milk, my chickens would not lay. The old horse that I once had fat, got skinnier every day. For stock food, grain and other stuff, I was blowing in my "Mon." But seeing no improvement, knew I'd soon go on the bum. So one fine day I tied the cow and horse up with a rope and made 'em eat two buckets filled with "Stolz & Peterson's Molasses Dope."

The old cow's bag began to swell, the horse he soon got fat, and when I drove him on the streets I could not wear a hat. He passed the autos and the cars and everything we met, and if I hadn't put him in the barn, he might have been going yet.

I got my chickens a hundred pounds of their "Eureka Feed," as I was told by a poultry man that that is what they need. They started in to laying, the roosters they did crow. I knew there was something doing, so to the hen house I did go. I crept up to the hen house, peeped in through the door, I saw my young hens laying and some that had never laid before. The eggs I gathered from the nests, say that was sure some sight; I gathered eggs before breakfast that the hens had laid that night. They some times lay two eggs at once, now this might seem a joke, but it's a common thing to break and egg and find a double yolk.

If you own a cow that does not milk, and chickens that don't lay, and an old plug that you once had fat, but is going down ever' day, just take a tip from one who knows and ring up 9-6-4, and order some of their mixed feed, try it, you'll order more.

To Messrs. Stolz & Peterson. From Chas. W. Morse, 2715 Ave. 0½. Been dealing with this firm 24 years.

All right, Mr. Morse, I have given your friends a thousand dollars worth of free advertising. Think of the thousands who will read about "Stolz & Peterson's Molasses Dope" for the first time. I never heard of it before. If Stolz & Peterson do not ship you a car without cost they do not realize the value of the advertising you have given them.—The Round Up.



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BROWN LEGHORNS**

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I have scores of satisfied customers, from British Columbia on the West to the Bermuda Islands on the East. A customer at High Prairie, Alta., reports 250 eggs from six pullets between Nov. 27 and March 20 last winter. My winnings at Brandon, Winnipeg and Regina since 1918 are proof of their quality. Eggs from two splendid matings, \$2.00 per 15. A limited number of day-old chicks, 30 cents each.

Satisfaction Guaranteed

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Pure Bred PARTRIDGE WYANDOTTES

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Prize Winners at the last five
Winnipeg Shows

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SNOWFLAKE S.C. ANCONAS

are a strain of Anconas that are bred for beauty and egg production.

At Brandon Winter Fair, 6 out of 9 entries were placed by Judge Oke, winning 1st pen, 2nd pullet, 2nd hen, 2nd and 3rd cockerel and 3rd Cock.

I have mated a grand pen of females, birds that have shelled out the eggs in the coldest of weather. Winners at Brandon, Regina and Winnipeg, headed by a cock shown five times, every time a winner. A proven Sire of quality chicks.

Hatching eggs from this pen, \$3.00 per 15; \$5.00 per 30.

Open range flock pen, mated to 1st cockerel Brandon, 1923; 2nd and 3rd cockerel and 1st pen cockerel. Eggs from this pen, headed by four grand males, \$2.00 per 15; \$10.00 per 100.

If you are dissatisfied with your present breed as winter and all the year round layers, give Snowflake strain a trial and join the ranks of satisfied customers.

A square deal guaranteed. 80% fertile guaranteed and express paid.

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If you want birds that will lay Winter and Summer, also beauty and meat, you must have LIGHT SUSSEX. My Breeding Pens include many prize winners, no culls. Bred direct from Imported Birds. Order early. Per A, \$5.00. Pen B, \$3.00 per fifteen, infertiles replaced.

H. C. VIPOND, Kenora, Ont.

RED



ALLEY

Conducted under the auspices of the Canadian Rhode Island Red Club.

C. Hodgson, secretary-treasurer, 1145 Dovercourt Road, Toronto, Canada.

Mrs. N. J. Gordon, Editor, Transcona, Director for Manitoba

This month we are favored with an article from Mr. J. Elden, of Saskatoon, for which we feel greatly indebted. Send along any items that you think would be of interest in our paper. Don't be a knocker: if you can't be a booster, say nothing.

I have been wondering what I could say in this article to help those who are breeding Rhode Island Reds, and also to bring up one or two points that need to be driven home.

In the first place I will ask the question, "Why are the Rhode Island Reds not so popular as they might be?" or "Why more people do not keep them?"

I will answer the question, as I see it. I find on the whole that they are more popular in Alberta, particularly in Southern Alberta, than in Saskatchewan, for I have travelled over the greater portion of both provinces and made this particular observation, and I have often asked myself this question.

The real answer to the question to my mind is this: "Lack of real in-

terest in the breed and careless breeding by the majority of those who breed them."

How many keepers, for they are too often nothing else and not real breeders of Reds, can tell you the history of the Reds, how they originated, and how they developed, and who were the men that brought them into being, and before the public as a standard fowl? I have listened to many accounts and often had to smile at various ones who have related to me their idea how the Reds originated, and too often they had not the vaguest idea. Now I think it is a great pity, for I lay it down as a real necessity that the novice or beginner who is starting with any breed of poultry should know the genesis and history of the breed. Then I claim that the breeder who will do this will follow on and breed more intelligently and catch the idea and inspiration of those who brought the particular breed into being and helped to make the breed what it is today. We need the retrospective view as well as the prospective view in our work, no matter what

breed we are working with. Now, Red breeders, or keepers, as the case may be, look it up, and if you are not a better poultryman for so doing, all I have to say is that I have missed my guess.

I noted the other month that Mr. McGrew in the Canadian Poultry Review made this statement, or words to the effect: "that if all the other breeds in the Standard had originated like the Rhode Island Reds we should have had vastly superior breeds of fowl in vigor and stamina." So much for that! and now for the latter part of the answer—careless breeding by many who keep Reds. Often has this remark been made to me when I have been expounding on the good qualities of the Reds: "Well! I don't doubt their good qualities, but all the flocks I have seen have been so poor type, as I understand it and off color, or so many shades of Red, that I have left them alone and taken up this breed I now have." The only answer I have made and could make was to the effect that it was not the fault of the breed, but the fault lay with those who were breeding them; and I think I am right, for I have seen too many flocks of this description myself, and often been disgusted.

I keep a large flock on open range in Alberta, and though I never put a bird into a show, I always culled my flock, so that at maturity they were all of one color and they were always greatly admired. I never allowed an off-colored bird to exist for long. It went into the pot or oven, any time one showed up, as one or two would once in a while, particularly at the begin-

GORDON'S S.C.R.I. REDS

Win at the Largest Show in America

ROYAL, TORONTO

One of the greatest Red Classes ever seen. 1st Young Pen and Special Best S.C. Pen in the largest Pen Class in the Show. Also 6th Cockerel.

AT GUELPH

2nd Cock, 4th and 5th Cockerel, 5th Pullet and 2nd Pen.

AT SASKATOON

Silver Challenge Cup for Best R.I. Red Cock

1st Cock, 4th Hen, 1st, 3rd and 4th Cockerel.

1st, 2nd and 3rd Pullet, 1st Pen.

Nine awards on nine entries.

AT WINNIPEG

1st, 3rd and 4th Cock, 2nd Hen, 1st, 2nd, 5th and 6th Cockerel, 1st, 2nd, 3rd, 4th, 5th and 6th Pullet, 1st, 2nd and 3rd Pen. Best Female. Production Class, 1st Pen. Best Display.

This
Season's
Winnings

AT ST. JAMES AND ASSINIBOIA,

Silver Cup for Best Display in the Show 1st and 2nd Cock, 2nd Hen, 1st, 2nd, 3rd and 4th Cockerel. 1st, 2nd, 3rd and 4th Pullet. 1st and 2nd Pen. Best Red Cockerel Best Red Female. Best Red Display. Best Open Display. Best Utility Pen in the Show.

BRANDON

Cocks, 1st and 3rd. Hen, 3rd. Cockerels, 1st, 2nd, 3rd and 4th. Pullets, 1st, 2nd, 3rd, 4th and 5th. Pens, 1st and 2nd. Special for the Best Pair of R. I. Reds. Best Display, 3 years in succession.

REGINA

Cock, 1st. Cockerels, 1st, 3rd and 6th. Pullets, 1st, 3rd and 5th. Pen, 1st. 1st Pullet also won shape and color special.

Consistent Winners Year after Year. All the above Winners were Bred and Owned by Me. Still Some Stock For Sale.

BOX P. 221

TRANSCONA

MRS. N. J. GORDON

HATCHING EGGS

MANITOBA

ning. Let me say that it is not necessary to have this class of bird to do the production work, my best layers were always my best colored birds and neither is it necessary to have a Dotter or Rock type of bird to do the laying.

Amongst the average flock of Reds these types are too prevalent. In breeding Reds I place vigor, type and color as essential, and if any one taking up Reds strives for these three points, they will have a flock of Reds that will do them credit and give them every pleasure.

Study the Standard and breed to the Standard, for in the Standard Red we have a bird that cannot be excelled for beauty and utility qualities. Get it into your head, and let it stay there, that the structural lines of the Standard Red cannot be beaten for utility purposes. It has been interesting to me this last two or three years to notice the cuts in our poultry papers of many high-producing Leghorns, that their body follows the lines of the Standard Red. I have been often greatly struck by this observation. As a farm fowl or for the backyard, the Red cannot be beaten, and I know no breed of fowl that will stand up to our climatic conditions here in Western Canada better than the Red. All honor to those who are breeding real Reds in Western Canada. I only wish there were more of them, so that this wonderful breed could have its place on the map, as it richly deserves. Join the Canadian Rhode Island Club and read the Red journal, \$1.50 per year, and you will find the greatest help you can get in breeding Reds.

We must congratulate Mr. H. Willis, of St. Vital, Man., he has just been appointed President of St. Vital Poultry Association. He is a great Red enthusiast and booster of our Club, and we are sure he will make a very valuable and popular president and we are glad of this opportunity to give him our best wishes.

HELPFUL HINTS FOR R. I. R. BABY CHICKS

May is the best month of the year for hatching the little chicks. Feed them well, provide shade and water this summer, let them roost in open air houses, and if, in addition, you have a green patch of ground for them to run on, your May hatch will produce splendid chickens. It is not necessary to pamper, that does not produce the best results, but proper shelter, green runs and easily digested food are necessary, if the young birds are to develop the strength and vigor to sustain constant growth. Neglect, poor care or economy in feeding young stock is an expensive mistake. Many well bred birds will sell at a low price, or go to the pot, because they were not well grown. Bread softened in sweet milk is a good starting feed, together with oatmeal. Nature made the little chick's feet to run on the ground, and if we insist on keeping the chick removed from the ground, its wings begin to droop, bowel trouble starts, its legs weaken, and at last death ensues; so get them on the ground as soon as possible.

SINGLE COMB REDS

I am in a position to supply a limited number of hatching eggs this year from three mated pens of high class exhibition stock.

One Year Cock and a Few Cockerels For Sale.

H. WILLIS, 44 Worthington East, St. Vital, Man.

S. C. REDS

Hatching Eggs from large, dark, even colored winter layers.

Daniels and Owen Farms' Strains.

\$3 per 15, or \$5 per 30. Replace eggs at half-price if hatch is not satisfactory.

SAM ANDERSON

P.O. Box 258

Selkirk, Man.

HOUDANS

Winners at Madison Square Garden, four years in succession, 1921, 1922, 1923 and 1924, also Special for Best Colored Female and also Special for Best Crest. At the Premier Show of the World, New York.

Eventually You will get my strain, why not now?

WILLIAM MACKAY, Swift Current, Sask.

S.C. RHODE ISLAND REDS

Bred for Exhibition and Eggs
Stock and Eggs For Sale

W. F. MORDEN

Box 261

Keewatin, Ont.

EGGS FOR HATCHING BARRED ROCKS (Pure Bred)

\$3.00 for 30.

MRS. M. VIALOUX

Varsity View

Man.



INSPECTION INVITED

THE LACEY AUTOMATIC ELECTRIC INCUBATOR

Most perfect on the market from Scientific Heating, Ventilation, and Moisture standpoints. The only machine using Electric Globes.

Prices on Incubators - - - \$35.00 up

Prices on Brooders - - - \$10.00 up

Community Hatching, \$5.00 per 100 eggs, any quantity.

Our own hatched Baby Chicks, standard price, 25c each.

J. LACEY & SONS

1398 Portage Ave.,

WINNIPEG

MANITOBA

Phone B 1287

Another point to be kept in mind, is the need of shade during the hot days. Another thing to look out for is lice. Often you will find the chicks' heads covered. You will find this unless you have taken proper care of the mother. Dip your little finger in a little fresh cream or lard and touch their heads with it, this is the simplest and easiest way. Keep the chicks well supplied with water, but be sure it is pure water. Keep the water vessels clean. Frequent scaldings will keep them clean and sweet. Have the vessels arranged so that the chicks cannot get into them with their feet. This not only contaminates the water, but also gets the chicks wet, which most always results in chilling, and chilling is a forerunner of bowel trouble. Do all you can for the comfort of these fluffy, chubby chicks.

(Mrs.) N. J. GORDON.

FEEDING FOR EGG LAYING

Experiments to Test the Merits of Commercial and Home-Made Mash

"The feed cost of producing a dozen eggs, especially during the winter months, has an important bearing upon the profits to be made in the poultry industry," remarks the Dominion Poultry Husbandman, Mr. F. C. Elford, in his valuable and comprehensive report for last year. In order to obtain in-

formation on this subject, experiments in feeding poultry are regularly carried on at the Dominion Experimental Farms. In order to test the respective economical values of highly advertised commercial laying mash compared with a home-mixed mash, consisting of equal parts by weight of bran, middlings, cornmeal, finely ground oats and beefscrap, experiments were conducted at the Central Farm in Ottawa for the six months extending from November to April inclusive. Ninety White Leghorn pullets were selected for the purpose divided into six equal lots, kept in the experimental house under exactly similar conditions. Tables given in the report show the results obtained from the use of the different mashings by months, and also give a summary covering the entire experiment. The pens of 15 birds each were numbered from 8 to 13, and the summary shows that the most eggs were produced by the home-made mash; that the pounds of grain and mash required to produce one dozen eggs were the lowest where home-made mash was fed; that the value of the eggs laid with the home-made mash with one of the pens, but that the average of the two pens so fed was rather less than that of one of the pens supplied with a commercial mash and the commercial scratch, and that the greatest gain over cost of feed came from the two pens fed the home-made mash.

New Discovery Routs Chicken Lice

Mineralized Water Gets Rid of Dusting Birds Delouse Themselves—Fine for Baby Chicks and All Poultry

This wonderful product keeps the poultry always lice-free without the poultry raiser doing any work. It is the simplest, easiest, surest and best method ever discovered.



H. T. Thorne, Fleming, Sask., says: I have tried Lice-Go and do not want to be without it.

G. W. Marshall, Stewiacke, N.S., says: Last summer I used Lice-Go for my hens and chickens, and I think it a good article.

H. N. Olson, Box 28, Edgerton, Alberta, says: Your Lice-Go tablets worked wonderful on our chickens, my neighbors all want it, too.

M. A. Urquhart, Zephyr, Ont., says: The Lice-Go tablets are all you say they are, I will be sending you a larger order later.

Lice-Go is dropped in the chicken's drinking water. Taken into the system of the bird, it comes out through the oil glands of the skin and every louse or mite leaves the body. It is guaranteed to help the hatchability of the eggs and cannot injure the flavor of the eggs or meat; is harmless to chicks and does not affect the plumage. A few days treatment at the start and then a little added to the drinking water each month is all that is necessary.

Send no Money—Just your name and address. A card will do. We are so confident that Lice-Go will get rid of every louse or mite that we will send you one large double strength \$1.00 package, enough for 100 gallons of water. When it arrives pay postman only \$1.00 and few cents postage. If you are not absolutely satisfied after 30 days' trial, your money will be refunded.

A. B. WARDER, Wiarton, Ont., Box 11R (3 packages, \$2.00) cash orders postpaid.

S.C. BLACK MINORCAS EGGS FOR HATCHING

From Two Pens—Exhibition Stock
\$3.00 and \$5.00 per Setting.

W. H. CROSS

Yorkton : : Sask.

DRINK

DREWRY'S
Beer, Ale and Stout
Here Since 1877 and
Still the Best

J-7221

HOLLYWOOD S.C. WHITE LEGHORNS Eggs Chicks

All our breeding stock of selected, one, two and three year old Hens, Hollywood Tancred, O.A.C. (direct) mated to Hollywood pedigreed males, from which we are offering hatching eggs and baby chicks at a get-acquainted price. Order from this add. We guarantee to give satisfaction.

Eggs—\$8 per 100. Chicks—\$20 per 100

PIONEER POULTRY FARM
Medicine Hat Alberta

Fifth Canadian Egg Laying Contests

(OTTAWA)

Conducted by the Dominion Experimental Farm, Ottawa, Ont.

The contest started Nov. 1 and continues for 52 weeks. Each pen in the contest contains ten birds and the birds in each pen are numbered from 1 to 10.

The following table gives the production for the individual birds for the week, under columns numbering 1 to 10. Column "W" gives the total weekly pen production and column "T" the total number of eggs for the pen to date.

B.P.R.—Barred Plymouth Rocks. R.C.R.I.R.—Rose Comb Rhode Island Reds. W.W.—White Wyandottes. W.P.R.—White Plymouth Rocks. S.C. Anc.—Single Comb Anconas. W.L.—White Leghorns. S.C.R.I.R.—Single Comb Rhode Island Reds.
x—Leading Pens. b—Broody. *—Moulting.

Report of Week No. 25, Ending April 23, 1924

Pen.	Owner and Address.	Breed	1	2	3	4	5	6	7	8	9	10	W.	Total
1.	J. R. Stork, St. Catharines, Ont.	B.R.	5	3	0	3	1	3	7	7	5	6	40	616
2.	Rev. H.A.E. Clarke, Bells Corners, O.	B.R.	1	4	6	4	5	5	4	5	6	5	45	681
3.	G. E. Hall, Trafalgar, Ont.	B.R.	7	3	4	2	6	6	6	0	7	4	45	806
4.	A. Dalgarno, Hanover, Ont.	B.R.	0	1	6	4	3	0	3	5	5	4	31	458
5.	C. A. Webster, Cainsville, Ont.	B.R.	3	6	5	7	6	4	5	3	5	3	47	722
6.	R. A. Snowball, Chatham, N.B.	B.R.	b	6	5	7	1	7	7	6	6	6	51	906
7.	J. C. Quanbury, Port Dover, Ont.	B.R.	2	4	6	6	4	1	0	4	5	2	34	743
8.	W. E. B. Tait, Dorchester, N.B.	B.R.	6	5	4	6	3	5	5	2	0	5	41	685
9.	W. J. Johnston, Meaford, Ont.	B.R.	6	7	7	6	6	6	7	6	7	7	65	811
10.	French Bros., Newmarket, Ont.	B.R.	4	2	7	5	3	2	6	4	0	0	33	583
11.	Wm. Downham, Highland Creek, O.	B.R.	6	3	1	5	0	6	7	3	5	5	41	814
12.	J. C. Clark, Gainsville, Ont.	B.R.	7	6	5	5	0	3	3	6	0	5	40	628
13.	H. G. L. Strange, Fenn, Alta.	B.R.	5	7	6	6	7	5	6	5	5	5	57	566
14.	Ferguson Farms, Dyersburg, Tenn.	B.R.	7	7	6	6	4	6	0	3	3	6	48	721
15.	E. C. Foreman, E. Lansing, Mich.	B.R.	7	6	0	0	1	7	6	2	5	5	39	617
16.	Culp's P. Farm, Berkeley, Ont.	B.R.	4	1	6	5	0	7	0	5	2	5	35	871
17.	Hope P. Farm, Billings Bridge, O.	B.R.	6	7	4	6	1	7	4	4	7	4	50	744
18.	W. E. L. Coleman, Ottawa, Ont.	B.R.	6	3	1	3	2	0	6	5	4	2	32	531
19.	J. R. Baker, Batteau, Ont.	B.R.	2	2	3	3	0	3	6	5	1	1	26	224
20.	C. M. Goddard, Britannia H., Ont.	B.R.	0	4	0	3	5	5	5	5	6	4	37	762
21.	W. R. Retson, Truro, N.S.	S.C.R.I.R.	3	5	3	6	4	3	6	6	6	4	46	917
22.	Evergreen Farm, Greenville, Mich.	W.W.	7	3	6	7	5	5	4	6	0	6	49	880
23.	W. H. Fisher, Ayton, Ont.	W.W.	0	4	3	4	6	2	4	4	3	7	37	696
24.	J. C. Mercer, Markdale, Ont.	W.W.	0	1	3	2	5	4	6	0	1	5	27	534
25.	Lewis Miller, Hamilton, Ont.	W.W.	5	5	4	6	5	4	2	2	7	42	702	
26.	H. Simpson, Leamington, Ont.	W.R.	6	0	5	1	5	4	6	2	6	5	40	526
27.	N. H. Gampp, New Hamburg, O.	SC Anc.	3	6	5	4	5	6	3	5	3	4	44	584
28.	H. G. Hebel, Bridgeport, Ont.	W.L.	6	0	6	4	0	3	4	6	0	7	36	683
29.	Chas. Williamson, Woodroffe, O.	W.L.	4	5	5	5	5	6	6	6	4	5	51	524
30.	Heber S. Rogers, Peterboro, O.	W.L.	5	0	6	6	0	7	6	5	5	0	40	874
31.	Philip Henrich, Waterloo, Ont.	W.L.	5	6	7	6	5	2	6	5	5	7	54	787
32.	Ottawa East P. Yards, Ottawa, O.	W.L.	6	6	4	6	5	6	4	6	0	3	46	638
33.	Stork & Ruddle, St. Catharines, O.	W.L.	7	4	4	6	6	4	5	6	4	4	50	806
34.	G. S. Dundas, Markdale, Ont.	W.L.	6	5	4	6	3	6	5	6	6	2	49	862
35.	Meadowedge Farm, Cedarhurst, N.Y.	W.L.	0	4	0	5	5	6	6	4	5	6	35	963
36.	Dr. I. H. Ante, Richmond Hill, O.	W.L.	6	4	6	6	6	6	6	5	5	5	55	702
37.	Lewis N. Clark, Port Hope, Ont.	W.L.	6	5	6	3	4	7	0	5	6	5	47	906
38.	G. A. Wood, Peterboro, Ont.	W.L.	4	3	5	0	4	2	3	3	6	6	36	662
39.	H. Bollivar, Cloverdale, B.C.	W.L.	5	5	6	3	3	6	6	5	6	5	50	823
40.	Walter Rose, Brussels, Ont.	W.L.	5	7	5	7	5	7	6	5	5	7	59	1011
41.	Russell Sulley, Courtice, Ont.	W.L.	3	4	6	6	6	4	2	5	2	4	42	684
42.	Geo. B. Ferris, Grand Rapids, Mich.	W.L.	7	7	6	5	5	3	5	4	6	6	54	746
43.	R. J. Penhall, Port Dover, Ont.	W.L.	6	6	7	5	6	5	0	1	4	6	46	805
44.	Hollywood P. Farm, H'wood, Wash.	W.L.	6	4	7	5	7	6	6	5	7	5	58	1094
45.	Manor Farms, Clarkson, Ont.	W.L.	5	6	6	6	6	6	5	6	6	6	58	611
46.	C. W. Sulley, Cobourg, Ont.	W.L.	1	4	5	5	6	4	6	4	7	7	49	687
47.	Cloverlea Stock F'm, Edmonton, Alta.	W.L.	6	5	6	2	5	5	5	6	3	3	46	801
48.	W. J. Richardson, Caledonia, O.	W.L.	3	6	6	4	5	1	2	6	6	6	45	610
49.	Cooksville P. F'm, Cooksville, Ont.	W.L.	2	5	7	4	5	6	4	5	5	6	49	737
50.	H. G. Rogers, Cooksville, Ont.	W.L.	5	4	3	1	6	7	6	6	0	7	45	642
51.	Winchester P. F'm, Deep Brook, N.S.	W.L.	7	5	5	7	7	4	6	7	6	4	58	762
52.	J. C. Quanbury, Port Dover, Ont.	W.L.	5	5	6	5	6	6	5	5	5	7	55	902
53.	Alex. McLean, Gananoque, Ont.	W.L.	6	5	6	7	5	6	6	5	6	6	58	993
54.	Geo. Craig, Deschenes, Que.	W.L.	4	6	2	5	6	5	5	7	5	7	52	880
55.	W. H. Fisher, Ayton, Ont.	W.L.	6	5	6	4	6	6	6	6	5	6	56	974
56.	J. C. Mercer, Markdale, Ont.	W.L.	4	5	5	6	3	7	6	5	7	6	54	729
57.	C. W. Coit, Bowmanville, Ont.	W.L.	6	6	5	5	3	0	6	6	7	7	51	885
58.	W. J. O'Neill, Bassano, Alta.	W.L.	6	5	4	5	6	6	5	6	2	6	51	860
59.	Credit Vale Farm, Streetsville, Ont.	W.L.	6	5	5	5	6	0	5	5	6	5	48	801
60.	H. E. Smith, Port Arthur, Ont.	W.L.	5	5	5	5	6	5	7	5	5	3	51	765
61.	T. W. Morse, Port Credit, Ont.	W.L.	0	7	4	0	6	4	0	0	4	4	29	628
62.	B.C. Agri. Col., Vancouver, B.C.	W.L.	6	0	4	6	5	6	4	6	6	5	48	843
63.	Ont. Agri. College, Guelph, Ont.	W.L.	0	0	0	4	0	6	0	5	3	2	20	467
64.	Man. Agri. Col., Winnipeg, Man.	W.L.	0	6	5	4	4	0	5	5	4	6	39	582
65.	Kempville, Agri. Sch., Kempville, W.L.	7	6	7	6	7	6	6	7	7	6	65	903	
66.	MacDonald Col., MacDonald, Que., SCRIR.	5	0	0	6	4	5	5	1	3	6	35	916	
67.	MacDonald Col., MacDonald, Que.	B.R.	6	4	4	0	5	3	6	6	5	3	42	835
68.	Ont. Agri. College, Guelph, Ont.	B.R.	1	5	6	6	5	2	7	5	6	49	653	
69.	Man. Agri. Col., Winnipeg, Man.	B.R.	5	5	6	5	5	0	4	6	3	43	593	
70.	Kempville A. Sch., Kempville, O.	B.R.	6	4	6	6	3	7	2	0	3	3	40	832
71.	Experimental Farm, Lethbridge, Al.	B.R.	4	3	6	3	5	1	5	7	3	0	37	837
72.	Experimental Farm, Ottawa, Ont.	B.R.	6	5	0	4	0	0	3	0	1	0	19	525
73.	Experimental Farm, Ottawa, Ont.	B.R.	6	5	0	3	7	5	6	5	6	49	804	
74.	Experimental Farm, Ottawa, Ont.	B.R.	7	6	4	0	5	0	0	0	1	0	23	552
75.	Experimental Farm, Ottawa, Ont.	B.R.	6	2	6	4	7	4	3	6	7	3	48	764
76.	Experimental Farm, Ottawa, Ont.	B.R.	0	5	0	6	6	2	0	0	2	0	21	832
77.	Experimental Farm, Ottawa, Ont.	W.L.	0	6	0	6	0	7	2	4	1	5	31	691
78.	Experimental Farm, Ottawa, Ont.	W.L.	0	0	0	3	5	3	7	7	0	3	28	541
79.	Experimental Farm, Ottawa, Ont.	W.L.	0	2	7	0	4	4	4	3	6	0	26	702
80.	Experimental Farm, Ottawa, Ont.	W.L.	0	0	0	6	7	5	5	0	6	5	34	453
81.	Experimental Farm, Ottawa, Ont.	W.L.	7	0	0	7	5	5	5	4	0	6	39	512
82.	Experimental Farm, Ottawa, Ont.	W.L.	4	0	5	6	0	6	5	4	2	5	37	570
83.	Experimental Farm, Ottawa, Ont.	W.L.	2	2	5	0	0	7	0	7	3	0	26	412

Totals 3584 60099

Egg Laying Contests—Continued

(PRAIRIE PROVINCES)

ALBERTA EGG LAYING CONTEST, LETHBRIDGE, ALTA.

Report of Week No. 25, Ending April 23, 1924

Pen.	Owner and Address.	Breed	1	2	3	4	5	6	7	8	9	10	W.	Total
1.	G. H. Menzies, Provost.	W.L.	5	4	5	6	5	3	5	7	4	5	49	488
2.	W. B. McLaine, Lethbridge.	W.L.	6	6	6	5	5	5	5	4	3	5	50	718
3.	Pioneer Poultry Farm, Medicine Hat.	W.L.	6	6	4	6	6	6	6	7	5	6	58	864
4.	Winter Egg Poultry Farm, Leth.	W.L.	7	5	5	6	4	4	6	6	5	6	55	x1126
5.	E. R. Nicholls, Big Valley.	W.L.	5	4	5	7	6	6	6	4	6	5	54	606
6.	Cloverlea Stock Farm, Edmtn.	W.L.	7	5	7	3	5	5	7	0	4	6	49	899
7.	Mrs. J. W. Cookson, Tofield.	W.L.	6	6	7	7	6	7	6	6	7	6	x64	895
8.	Round T. Ranch, High River.	R.C.W.L.	5	4	7	3	4	4	5	4	6	4	46	891
10.	R. A. Meeks, Manville.	S.C.B.L.	5	4	6	3	5	0	6	5	4	4	42	411
12.	W. A. Fraser, Medicine Hat.	B.R.	5	6	4	6	6	5	5	6	5	7	55	962
13.	B. Redding, Retlaw.	B.R.	3	3	3	6	5	6	0	6	4	6	42	476
14.	H. G. L. Strange, Fenn.	B.R.	5	6	4	5	6	4	5	5	7	0	47	714
15.	D. G. McCrae, Lethbridge.	B.R.	4	5	6	4	6	7	5	3	6	0	46	617
16.	E. J. Forner, Medicine Hat.	B.R.	5	0	5	5	2	0	3	3	0	26	415	
17.	H. Higginbotham, Calgary.	B.R.	3	0	5	4	5	6	6	5	3	6	43	639
18.	V. A. Coleman, Lethbridge.	B.R.	4	6	5	5	5	2	5	7	1	6	46	641
19.	F. Edwards, Edmonton.	B.R.	5	5	6	7	5	6	5	7	6	6	58	947
20.	M. Bolinger, Gleichen.	B.R.	5	7	4	5	5	5	5	4	3	5	48	685
21.	Cloverlea Stock Farm, Edmtn.	B.R.	5	7	5	4	4	5	7	4	6	6	53	838
22.	T. G. Kinvig, Medicine Hat.	P.R.	3	7	5	3	7	6	5	3	3	7	51	507
23.	E. Farquharson, Provost.	W.W.	5	4	3	5	5	4	3	5	6	2	42	560
24.	Dept. of Agri., Edmonton.	W.W.	4	0	5	5	0	0	6	5	5	6	36	839
25.	A. W. Fiske, Provost.	W.W.	6	6	6	4	5	5	4	0	4	0	40	513
26.	Gould Bros., Vegreville.	W.W.	6	0	6	d	1	6	5	4	1	6	35	633
27.	P. C. Litster, Vegreville.	W.W.	3	3	2	4	4	4	5	5	5	4	39	854
28.	Experimental Farm, Lethbridge.	B.R.	5	3	4	7	5	7	7	6	2	7	53	1100
29.	Experimental Farm, Lethbridge.	B.R.	5	4	5	6	7	5	4	7	6	6	55	1216
Totals			1282	20051										

MANITOBA EGG LAYING CONTEST, BRANDON, MAN.

Report of Week No. 25, Ending April 23, 1924

Pen.	Owner and Address.	Breed	1	2	3	4	5	6	7	8	9	10	W.	Total
1.	Wm. Gregg, Desford.	S.C.A.	4	2	5	6	6	5	5	5	3	4	46	393
2.	Geo. A. Frame, Winnipeg.	S.C.A.	6	2	6	6	6	6	6	5	6	5	54	921
3.	Jos. McQuoid, Winnipeg.	W.L.	6	4	6	6	4	5	5	7	5	5	53	750
4.	W. R. Barker, Deloraine.	B.R.	4	5	6	5	7	6	7	7	4	6	57	1000
45.	H. Beaumont, Cordova.	B.R.	6	6	6	5	6	6	7	6	3	5	57	494
6.	W. J. Currie, Brandon.	B.R.	5	7	6	2	5	5	6	4	7	5	53	766
7.	W. C. Brethour, Miami.	B.R.	5	5	7	7	5	4	5	7	3	4	53	772
8.	Mrs. A. Cooper, Treeshank.	B.R.	6	3	7	5	3	7	6	5	6	4	52	635
9.	Mrs. R. J. McNabb, Minnedosa.	B.R.	5	6	6	5	6	6	5	6	7	5	57	1005x
10.	Mrs. N. McNaughton, Morden.	B.R.	5	5	6	3	7	1	7	5	7	6	52	917
11.	R. F. Russell, Morris.	B.R.	6	7	4	6	5	5	6	6	5	6	56	393
12.	C. W. Willis, Elmwood.	B.R.	6	6	5	5	7	0	7	4	7	6	53	972
13.	W. J. Witter, Cordova.	B.R.	6	7	5	7	7	6	7	7	6	6	x64	638
14.	John Strachan, Pope.	B.R.	5	b	7	5	5	6	4	6	0	6	45	651
15.	John Strachan, Pope.	B.R.	5	6	5	5	6	6	5	7	5	5	56	419
16.	W. J. Robinson, St. James.	W.W.	4	5	6	7	5	0	6	6	5	5	47	348
17.	Mrs. A. S. Hart, Gladstone.	W.W.	4	6	4	5	5	5	3	6	5	5	48	762
18.	C. W. Wallis, Elmwood.	W.O.	7	6	7	6	2	5	7	7	5	5	57	961
19.	Parrot's Poultry Farm, Neepawa.	B.O.	0	3	4	6	4	2	6	2	5	4	37	346
20.	Dom. Ex. Station, Morden.	R.I.R.	6	4	6	6	7	6	5	5	7	5	57	756
21.	Man. Agricultural College, Wpg.	W.L.	6	3	4	7	4	7	5	2	4	0	42	571
22.	Dom. Ex. Farm, Brandon.	W.W.	0	4	4	4	6	5	0	5	2	5	35	766
23.	Dom. Ex. Station, Morden.	B.R.	4	4	7	5	6	6	4	6	5	7	54	775
24.	Man. Agricultural College, Wpg.	B.R.	7	0	2	6	0	6	0	7	5	5	39	695
25.	Dom. Ex. Farm, Brandon.	B.R.	6	5	5	6	6	0	4	5	6	6	49	1076
26.	Dom. Ex. Farm, Brandon.	B.R.	6	3	5	6	6	6	7	6	3	5	53	820
Totals			1326	18802										

SASKATCHEWAN EGG LAYING CONTEST, INDIAN HEAD, SASK.

Report of Week No. 25, Ending April 23, 1924

Pen.	Owner and Address.	Breed	1	2	3	4	5	6	7	8	9	10	W.	Total
1.	Henry Barton, Davidson, Sask.	B.R.	3	5	5	6	6	4	5	5	5	5	49x	279
2.	A. M. Dykes, N. Lethbridge, Alta.	B.R.	5	3	2	2	4	4	4	7	0	6	37	920x
3.	S. H. Jones, Blaine Lake, Sask.	B.R.	5	0	0	3	3	4	0	4	1	6	23	346
4.	D. J. McIntosh, Swift Current, Sask.	B.R.	0	1	4	5	0	5	0	0	0	3	23	388
5.	W. J. White, Saskatoon, Sask.	B.R.	1	0	3	3	4	5	4	4	1	3	25	678
6.	E. Barnett, Radisson, Sask.	W.W.	4	0	5	4	4	0	4	2	4	28	264	
7.	F. Finch, Lanigan, Sask.	W.W.	0	5	2	4	4	1	4	3	3	3	29	346
8.	G. W. Fraser, Grayburn, Sask.	W.W.	3	0	0	4	3	3	2	3	3	3	23	126
10.	Miller Bros., Bladworth, Sask.	W.W.	4	0	0	0	3	5	0	5	0	4	23	526
11.	Mrs. Wm. Hanson, Tessier, Sask.	R.I.R.	2	4	4	3	3	3	2	0	5	3	29	455
12.	Frank Holmes, Saskatoon, Sask.	R.I.R.	5	4	4	4	1	5	4	4	4	4	42	265
13.	W. A. Aitken, Drinkwater, Sask.	W.R.	3	6	4	0	3	3	6	5	6	5	42	206
14.	D. M. More, Colgate, Sask.	W.R.	2	4	5	5	4	5	6	5	5	3	44	244
15.	W. A. Aitken, Drinkwater, Sask.	S.C.A.	1	3	0	5	2	0	0	2	0	0	14	424
16.	J. Powell, Saskatoon, Sask.	W.L.	4	4	0	1	0	1	0	0	3	1	14	200
17.	Thos. J. Linton, Indian Head, Sask.	B.L.	1	4	0	0	0	6	1	1	0	5	18	314
18.	R. J. Thompson, Alameda, Sask.	B.L.	2	0	2	0	5	4	2	3	5	4	27	179
19.	P. A. Fisher, Regina, Sask.	W.W.	0	0	1	1	4	1	2	4	4	7	26	379
20.	Exp. Farm, Indian Head, Sk.	W.W.	3	3	3	3	0	4	5	4	5	2	32	944
21.	Exp. Farm, Indian Head, Sk.	W.W.	3	1	4	1	3	3	2	0	1	0	16	388
22.	Exp. Farm, Indian Head, Sk.	W.W.	0	2	3	2	4	0	1	1	3	0	16	240
23.	Exp. Farm, Indian Head, Sk.	W.W.	5	3	2	3	4	1	0	1	4	4	28	313
24.	Exp. Farm, Indian Head, Sk.	W.W.	6	2	0	5	0	5	6	5	5	b	34	402
25.	Exp. Farm, Indian Head, Sk.	W.W.	0	0	0	4	2	0	0	0	3	0	9	432
Totals			651	9258										



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LAYING RECORD MADE BY BARRED ROCK PEN

A Canadian and possibly a world's record in egg production in an official Egg Laying Contest was established at the Experimental Farm, Nappan, N.S., when a pen of ten Barred Rock pullets, owned by the Experimental Farm, Nappan, produced a total of 70 eggs in 7 days. The record was made during the 21st week of the fifth Nova Scotia Federal Egg Laying Contest. This pen laid 100 per cent. from March 15 to March 27, but missed one egg on the 28th, producing 139 eggs in 14 consecutive days. They are also leading in the contest, with a production of 802 eggs in 22 weeks. Eight of the above birds are from hens which qualified for registration in the 1921-22 contest. D. G. O'Reilly's pen of white Leghorns

are second in the contest with 796 eggs, Mrs. Fred Chapman's Barred Rocks, are third, with 706 eggs; Fred Cochran's Barred Rocks, fourth, with 659 eggs; Experimental Station, Charlottetown, White Leghorns, fifth, with 658 eggs; Lawson Lowe's Barred Rocks, sixth, with 648 eggs; Experimental Farm, Nappan, seventh, with 638 eggs; Corbett and Hough's White Leghorns, eighth, with 606 eggs; Mrs. John J. Simpson's Barred Rocks, ninth, with 588 eggs; and Experimental Farm, Nappan, tenth, with 569 eggs.

The high hens to date are No. 178 from the Kentville Experimental Station's pen of Barred Rocks, with 133 eggs; followed by Lawson Lowe's Barred Rock No. 21, with 199 eggs; and the Nappan Experimental Farm Barred Rocks, Nos. 210, 203, and 205, with 115, 108 and 106 eggs, respectively. This production is out of a possible 154 eggs. The highest week to date was

the 22nd, with a production from 200 hens of 1,013 eggs or 72.4 per cent. On April 1, these birds produced 186 eggs, or a 93 per cent. production. From November 1, 1923, to April 2, 1924, the production has been 11,173 eggs, or 2,573 eggs higher than the production for the same period in the 1922-23 contest with the same number of birds.

From November 1, 1923, to March 19, 1924, the 200 birds showed a profit of \$196.30 over feed cost, or a profit per bird of 98 cents for the four and one-half winter months. "It pays to have your pullets hatched as early as possible and have them laying during the winter when the price of eggs is highest. Buy your cockerels from breeders who are breeding bred-to-lay stock and thus increase your standard of production," says W. W. Baird, superintendent of the Nappan Experimental Farm.—Halifax Chronicle.

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